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Telephone follow-up, initiated by a hospital-based health professional, for postdischarge problems in patients discharged from hospital to home (Review)

Mistiaen P, Poot E

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[Intervention Review]

Telephone follow-up, initiated by a hospital-based health professional, for postdischarge problems in patients discharged from hospital to home

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ABSTRACT

Background

It is known that many patients encounter a variety of problems in the first weeks after they have been discharged from hospital to home. In recent years many projects have addressed discharge planning, with the aim of reducing problems after discharge. Telephone follow-up (TFU) is seen as a good means of exchanging information, providing health education and advice, managing symptoms, recognising complications early, giving reassurance and providing quality aftercare service. Some research has shown that telephone follow-up is feasible, and that patients appreciate such calls. However, at present it is not clear whether TFU is also effective in reducing postdischarge problems.

Objectives

To assess the effects of follow-up telephone calls in the first month post discharge, initiated by hospital-based health professionals, to patients discharged from hospital to home.

Search methods

We searched the following databases from their start date to July 2003, without limits as to date of publication or language: the Cochrane Consumers and Communication Review Group's Specialised Register, the Cochrane Central Register of Controlled Trials (CENTRAL, *The Cochrane Library*), PubMed, EMBASE (OVID), BiomedCentral, CINAHL, ERIC (OVID), INVERT (Dutch nursing literature index), LILACS, Picarta (Dutch library system), PsycINFO/PsycLIT (OVID), the Combined Social and Science Citation Index Expanded (SCI-E), SOCIOFILE. We searched for ongoing research in the following databases: National Research Register (http://www.update-software.com/nrr/); Controlled Clinical Trials (http://www.controlled-trials.com/); and Clinical Trials (http://clinicaltrials.gov/). We searched the reference lists of included studies and contacted researchers active in this area.

Selection criteria

Randomised and quasi-randomised controlled trials of TFU initiated by a hospital-based health professional, for patients discharged home from an acute hospital setting. The intervention was delivered within the first month after discharge; outcomes were measured within 3 months after discharge, and either the TFU was the only intervention, or its effect could be analysed separately.

Data collection and analysis

Two review authors independently assessed studies for inclusion and for methodological quality. The methodological quality of included studies was assessed using the criteria from the Cochrane Effective Practice and Organisation of Care Review Group. The data-extraction form was based on the template developed by the Cochrane Consumers and Communication Review Group. Data was extracted by one review author and checked by a second author. For as far it was considered that there was enough clinical homogeneity with regard to patient groups and measured outcomes, statistical pooling was planned using a random effects model and standardised mean differences for continuous scales and relative risks for dichotomous data, and tests for statistical heterogeneity were performed.

Main results

We included 33 studies involving 5110 patients. Predominantly, the studies were of low methodological quality. TFU has been applied in many patient groups. There is a large variety in the ways the TFU was performed (the health professionals who undertook the TFU, frequency, structure, duration, etc.). Many different outcomes have been measured, but only a few were measured across more than one study. Effects are not constant across studies, nor within patient groups. Due to methodological and clinical diversity, quantitative pooling could only be performed for a few outcomes. Of the eight meta-analyses in this review, five showed considerable statistical heterogeneity. Overall, there was inconclusive evidence about the effects of TFU.

Authors' conclusions

The low methodological quality of the included studies means that results must be considered with caution. No adverse effects were reported. Nevertheless, although some studies find that the intervention had favourable effects for some outcomes, overall the studies show clinically-equivalent results between TFU and control groups. In summary, we cannot conclude that TFU is an effective intervention.

PLAIN LANGUAGE SUMMARY

Telephone follow-up by a hospital-based health professional after hospital discharge

Many patients encounter a variety of problems in the first weeks after they have been discharged from hospital to home. Telephone follow-up, initiated by hospital-based health professionals, is considered to be a good means of exchanging information, providing health education and advice, managing symptoms, recognising complications early and giving reassurance to patients after discharge. Some research has shown that telephone follow-up is feasible, and that patients appreciate such calls. However, until now it was not clear whether telephone follow-up is also effective. Our systematic review identified 33 relevant studies, almost all of which were of low methodological quality (a major limitation of the review). We found that telephone follow-up has been applied in many patient groups. There is great variety in the ways the telephone follow-up has been performed. Many different outcomes have been measured. Some studies found effects in favour of the telephone follow-up intervention, but overall studies identified no statistically significant differences between the telephone follow-up and control groups. For as far as the results of studies could be pooled together, we could draw no firm conclusions about the effects of telephone follow-up. No studies identified adverse effects of the intervention.

BACKGROUND

We know from several primary studies and literature reviews (Bull 2000; Cole 2001; Hyde 2000; Mistiaen 1999a; Parker 2002; Shepperd 2004) that many patients encounter a variety of problems in the first weeks after they have been discharged from hospital to home. These problems can include: difficulty with activities of daily living, emotional problems, knowledge deficit (for example, insufficient knowledge to understand symptoms or advice), insufficient help, uncertainty and anxiety, and informational needs (patient perceives a need for more information than given). For instance, Bull (Bull 2000) states that 'people were given little information regarding their medications and condition, they had difficulty managing special diets, and they were often unclear about which activities they could engage in, or which ones they should avoid...In addition elders in one study had difficulty in evaluating symptoms and deciding whether a symptom was related to their medical condition or to the adverse effects of medication... Unmet information needs one week following hospital discharge were reported by 80% of elders... Problems with recognising the signs of complications, managing medication, diet and other aspects of treatment contributed to hospital readmission' (p. 71). Although postdischarge problems are not always major medical problems, patients often perceive them as giving discomfort (LeClerc 2002). There is also empirical evidence that health professionals rate postdischarge problems in a different way to patients (Reiley 1996).

Although generally-accepted definitions of postdischarge problems and the postdischarge period are lacking, and may vary across illnesses and treatment procedures, research has shown that postdischarge problems are most intense in the period immediately after hospital discharge. Naylor's review (Naylor 2002) states that '4 to 6 weeks post discharge represents a critical period when many elders are at highest risk for poor discharge outcomes' and empirical research in a mixed population has shown that postdischarge problems are greater at 7 days post discharge than at 30 days post discharge (Mistiaen 1999b).

Moreover, in western developed countries, there is a tendency for shorter hospital stays and a shift to one-day-stay procedures, restricting the time available for health professionals to prepare patients adequately for their transfer to home and for the postdischarge period. This may increase postdischarge problems. Many projects have addressed discharge planning, with the aim of reducing problems after discharge. The focus of most discharge planning projects is selecting patients at risk of postdischarge problems as soon as possible after admission, preparing them in a timely and adequate fashion for discharge, and organising discharge arrangements. These discharge planning efforts do not resolve all problems, however (Parker 2002; Shepperd 2004). Patients need not only discharge preparation but also adequate aftercare. Aftercare is given in many different forms and may consist of several components, yet there is no scientific evidence that these aftercare efforts have clear beneficial effects (Bours 1998).

Since a large proportion of postdischarge problems relate to informational needs, and patients are reluctant to bother healthcare providers with their questions, it can be assumed that active telephone follow-up, initiated by hospital-based health professionals, may be of relevance to the problems patients face after discharge. Telephone follow-up (TFU) is seen as a good means of exchanging information, providing health education and advice, managing symptoms, recognising complications early, giving reassurance and providing quality aftercare service. Cox et al (Cox 2003) state that by telephone follow-up 'information can be reinforced, thereby increasing compliance, and ensuring the physical and emotional comfort of the patient'. Moreover, TFU is an intervention that is easy to organise and, in itself, does not cost a lot of money or time. The technology is available to almost all patients in western developed countries. Some research (Bowman 1994; Cave 1989; Keeling 1995; Kelly 1999) has shown that TFU is feasible, and that patients are satisfied with the calls (Johnson 2000d; Moran 1999; Schaeffer 2001). However, at present it is not clear whether TFU is also effective in reducing postdischarge problems. Studies so far show mixed results. For example, a randomised controlled trial of telephone follow-up versus usual care in ophthalmic surgery patients (Boter 2000) found no beneficial effects, except that patients valued the phone call. The authors of this study suggest that the no-effect might be due to outcome instruments that were not sensitive enough, or due to the non-problematic character of the patient group. But no-effect has also been demonstrated for more complex patient groups such as oncology patients (Beney 2002). On the other hand Beckie (Beckie 1989a) found TFU (versus no TFU) to enhance knowledge with regard to self-care measures and to reduce anxiety after discharge in coronary artery bypass graft patients, although this could not be confirmed in a later study by Roebuck (Roebuck 1999). Finally, Hartford and Wong (Hartford 2000) conclude their narrative literature review that 'plagued by inadequate sample size and weak designs, only two RCTs of nurse-initiated telephone follow-up in coronary artery bypass graft patients had positive results' (p.32).

Therefore, this review aimed to determine the effects of TFU delivered in the first month after discharge, initiated by hospital-based health professionals, to patients discharged from hospital to home, with regard to psychosocial and physical outcomes in the first three months post discharge.

TFU is only one way of providing support after discharge; this review however focused solely on this form of care since Bours (Bours 1998) performed a systematic (non-Cochrane) review of multicomponent aftercare and Johnson (Johnson 2003) has prepared a Cochrane review of written and verbal information versus verbal information only for patients being discharged from acute hospital settings to home. Based on two trials, Johnson concludes that provision of verbal and written health information on discharge from hospital significantly increased knowledge and satisfaction scores. Bours states that the majority of the (seventeen) studies did not report clear beneficial effects in favour of the intervention (multicomponent aftercare) group.

OBJECTIVES

To determine the effects of follow-up telephone calls (TFU) in the first month post discharge, initiated by hospital-based health professionals, to patients discharged from hospital to home, with regard to psychosocial and physical outcomes in the first three months post discharge. The effects of TFU are compared to usual care or other types of hospital follow-up (for example, TFU initiated by primary-care-based health professionals).

To determine the effects of TFU initiated/delivered by various healthcare professionals (eg. nurse, MD, social worker, pharmacist, ...) in subgroup analyses where appropriate.

To determine the effects of TFU initiated/delivered in various medical broad groups of patient populations (eg. all cardiac, all surgery patients, ...) in subgroup analyses where appropriate.

Although we expected to find that most TFU interventions focus on outcomes such as reassurance and informational needs, we included also other types of outcomes because of the great variety of postdischarge problems. We omitted to include patient satisfaction in the list of psychosocial outcomes in the protocol for this review (even though this outcome was discussed in the protocol background). We have therefore included satisfaction as a post hoc outcome in the review.

The following questions were addressed:

Primary outcomes:

- What are the effects of TFU initiated by a hospital-based health professional, on the psychosocial health (including uncertainty, anxiety, informational needs, mood, perceptions of coping, quality of life, social activity, satisfaction) of patients in the first three months post discharge, compared to usual care or other types of hospital follow-up?
- What are the effects of TFU on the physical health (including activities of daily living, self-care abilities, self efficacy, independence) of patients in the first three months post discharge compared to usual care or other types of hospital follow-u

Secondary outcomes:

- What are the effects of TFU on adherence of patients to recommended care in the first three months post discharge compared to usual care or other types of hospital follow-up?
- What are the effects of TFU on patient knowledge regarding disease or symptom management in the first three months post discharge compared to usual care or other types of hospital follow-up?
- What are the effects of TFU on adverse events (new morbidity, readmission) in the first three months post discharge compared to usual care or other types of hospital follow-up?
- What are the effects of TFU on service utilisation (healthcare services) in the first three months post discharge compared to usual care or other types of hospital follow-up?

Factors influencing outcomes:

Intervention-related factors:

- Does the structure/format of the TFU influence the outcomes?
- Does the type of healthcare provider (eg. doctor, nurse, social worker) of the TFU influence the outcomes?
- Does the timing of the TFU influence the outcomes?
- Does the frequency of the TFU influence the outcomes?
- Do discharge planning activities and/or aftercare interventions other than the TFU influence the outcomes?

Patient-related factors:

- Does the age of patients influence the effects of TFU?
- Does the length of hospital stay influence the effects of TFU?
- Does the medical diagnosis or procedure, carried out prior to discharge, influence the effects of TFU?
- Do disease severity and co-morbidities influence the effects of TFU?
- Does the person's home living arrangements (living alone, living with someone) influence the effects of TFU?
- Does the gender of patients influence the effects of TFU?

Other related factors:

- Does the country influence the effects of TFU?
- Does the type of hospital influence the effects of TFU?

Note: throughout this review the term 'patient' is used. Although we recognise that terms such as 'consumer', 'client', or 'person with ... condition' may be more accurate than 'patient' and preferred by consumers themselves, we think that 'patient' remains the term that is most well known internationally to denote a person that is or has been in contact with a health professional for a certain condition.

METHODS

Criteria for considering studies for this review

Types of studies

- Randomised controlled trials.
- Controlled trials.

In accordance with the definitions of the Cochrane EPOC group a study was considered to be a randomised controlled trial (RCT) if 'the participants were definitely assigned prospectively to one or two (or more) alternative forms of health care using a process of random allocation (eg. random number generation, coin flips)' and a study was considered to be a controlled trial if participants were 'definitely assigned prospectively to one or two (or more) alternative forms of health care using a quasi-random allocation method (eg. alternation, date of birth, patient identifier) or possibly assigned prospectively to one or two (or more) alternative forms of health care using a process of random or quasi-random allocation'.

Types of participants

- All patients discharged from an acute hospital setting (including emergency departments and one-day-stay procedures) to home (including a relative's home but excluding nursing homes or convalescence homes).
- All ages.

Types of interventions

Experimental intervention

Telephone follow-up (TFU) initiated by a hospital-based health professional (medical, nursing, social work, pharmaceutical, ...) to a patient who is discharged to his/her own home setting (including a relative's home). The TFU has to be performed at least once within the first month after discharge. The TFU may have any kind of structure: for instance completely open ('how are you doing?') or completely structured. The TFU may contain one or more elements such as gathering of information, giving reassurance, giving advice on several topics, counseling, referral where required, etc.

The TFU has, in principle, to be targeted to the patients themselves. In cases where the patients themselves are not able to talk on the phone (eg. very young children, very sick people, patients

with severe Alzheimer's disease) on one or more occasions when the TFU is delivered, these studies are included. On the data-extraction sheet the extent was noted to which the TFU was indirect, and separate analyses were conducted if appropriate for studies in which the intervention for the entire research population was delivered directly to the patients, and for studies in which the TFU was (partly) delivered to relatives/caregivers. We excluded studies in which the TFU is intended primarily to address the problems of caregivers rather than of patients.

The TFU may be delivered as the only aftercare intervention, or may be part of a multi-component discharge planning or aftercare intervention, but only if the studies report data on the effects of the TFU component, or its effects can be isolated and analysed to some degree.

Control intervention

Usual care, or other types of hospital follow-up.

Types of outcome measures

In the protocol for this review we established that we would seek and report data on the outcomes listed below. It is possible that other researchers may categorise these outcomes differently. However, the complexity and the heterogeneity of this field means that we have had to choose one approach to apply to this review.

Primary outcomes

Psychosocial health of patients, including:

- uncertainty;
- anxiety (and including depression where measured with the same instrument);
- informational needs;
- mood;
- coping;
- quality of life;
- social activity;
- satisfaction (post hoc outcome, see Objectives).

Physical health of patients, including:

- level of activities of daily living (ADL)/functional status;
- self-care abilities (an outcome generally used to mean self-care activities);
- self efficacy (an outcome measured using Bandura's (Bandura 1977) concept of self-efficacy, and referring to beliefs in one's capabilities to organise and execute the courses of action required to produce given attainments)
- independence.

Secondary outcomes

Other consumer oriented outcomes, including:

- treatment adherence;
- knowledge of disease and symptom management;
- adverse effects (eg. complications, infection, readmission (ie, data reported from the patient's perspective)).

Health service delivery oriented outcomes, including:

- hospital readmission (ie. data reported from the perspective of the health service);
- health services utilisation.

The outcomes had to be measured at least once within the first three months post discharge. Since there is no generally-accepted definition of what a postdischarge period means, and the duration of postdischarge problems may vary for different illnesses and treatment procedures, the choice of a time period for study had to be arbitrary. However there is evidence, as stated earlier, that most postdischarge problems occur in the period immediately after discharge. Moreover three months is a period for which it is reasonable to assume that outcomes can be related to the intervention in the first month after discharge; it is not likely that if effects were not found in this immediate postdischarge time frame, effects would be found later .

No restrictions were made with regard to the measurement tools used, but psychometric properties were recorded.

This review is limited to outcomes in patients themselves; possible outcomes in carers or relatives are not included.

Search methods for identification of studies

In August 2003 we searched the following databases, all from their original start date until July 2003:

- Cochrane Consumers and Communication Review Group's Specialised Register,
- Cochrane Central Register of Controlled Trials (CENTRAL, *The Cochrane Library*),
- PubMed,
- EMBASE (OVID)
- BiomedCentral,
- CINAHL,
- ERIC (OVID)
- INVERT (Dutch nursing literature index),
- LILACS,
- Picarta (Dutch library system),
- PsycINFO/PsycLIT (OVID)
- Combined Social and Science Citation Index Expanded (SCI-E), and
- SOCIOFILE.

We had planned to search the Cochrane EPOC Review Group's Specialised Register and the System for Information on Grey Literature in Europe (SIGLE), but SIGLE was no longer available in any European library and we were unable to access the EPOC Specialised Register.

We used the highly-sensitive strategy for the retrieval of controlled trials in PubMed, as proposed by Robinson and Dickersin (Robinson 2002) and supported by the Dutch Cochrane Center (Appendix 1). For PubMed, the controlled trials strategy was combined by AND with topic-specific strategy detailed in Appendix 2

We made appropriate variations of the PubMed strategy for the other databases; the strategies are listed at Appendices 3 to 13.

We located additional references by searching the reference lists of included studies and by contacting individuals known to be active

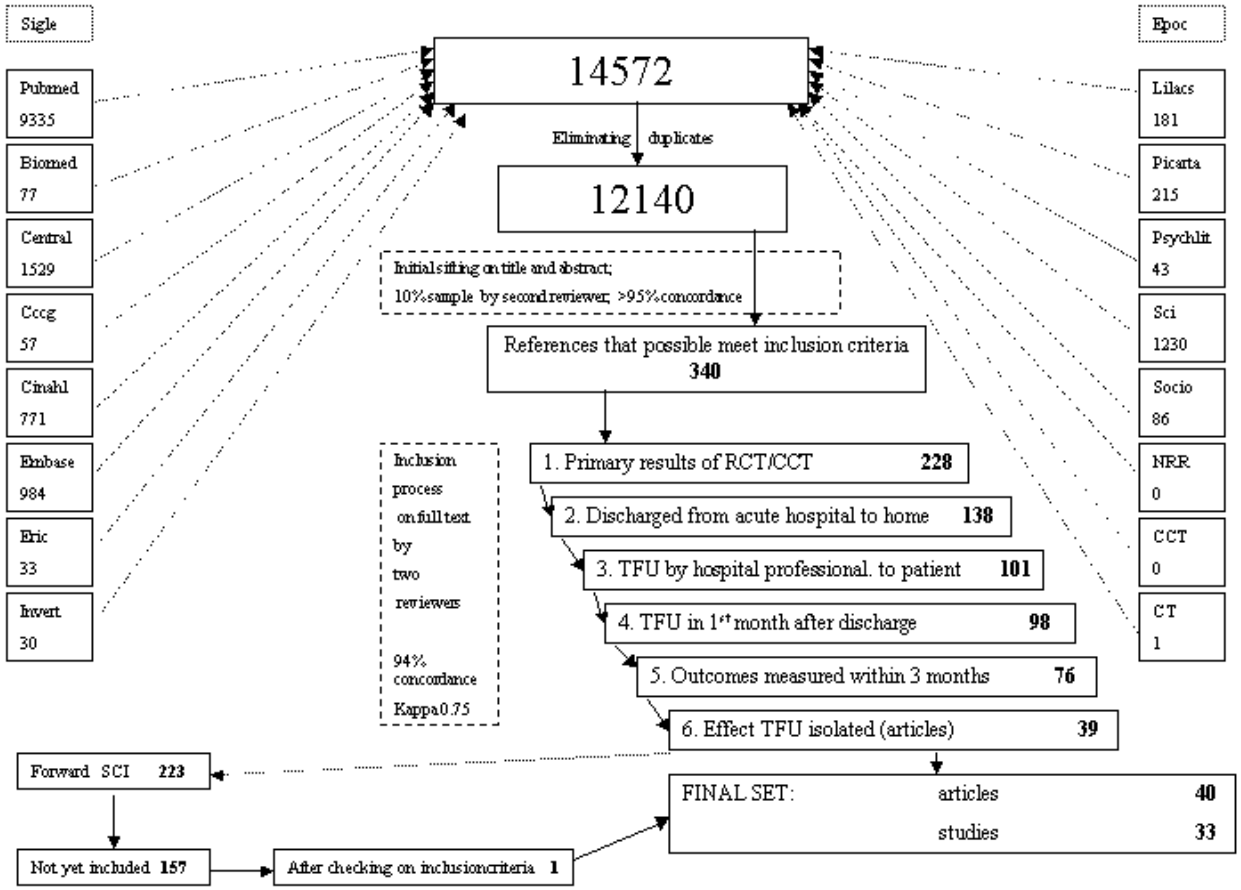
in the field of discharge and/or telephone care. In September 2004 we performed a forward search based on the included papers in the Science Citation Index, to find more recent papers that cited one or more of the already included studies.

We sought to identify ongoing research by searching the following databases in August 2003:

- National Research Register (http://www.update-software.com/nrr/);
- Controlled Clinical Trials (http://www.controlled-trials.com/);
- Clinical Trials (http://clinicaltrials.gov/).

We did not limit the search with regard to language or publication date. The search process is presented graphically in Figure 1.

Figure 1. Figure 1: Inclusion Process



Data collection and analysis

Electronic searching in the 16 databases yielded a total of 14,572 citations and, after elimination of duplicates, 12,140 citations were left for initial sifting. This very large number of references is due to the fact that the telephone is used in many studies to collect data. It was impossible to make a distinction in the search strategies between telephone as data collection method and telephone as an intervention.

Throughout the review process, the review authors were not blind to authorship of trials.

Stage 1: initial sifting

Two authors (PM, EP) independently checked a 10% random sample of these references, and as agreement between authors was more than 95%, further sifting at this stage was conducted by PM only. If the agreement whether to exclude studies between the two authors on the 10% sample was lower than 95%, it was planned the second author would proceed to check the other 90% of the sample. Where there was insufficient information from the title and/or abstract to determine relevance, we ordered the article in full text and proceeded to the second stage. This initial sifting against the inclusion criteria based on the title and abstract resulted in 340 potentially-relevant references.

Stage 2: inclusion procedure

We retrieved these 340 citations in full text, and assessed them against the six inclusion criteria as follows:

- (randomised) controlled trial;
- research participants are patients discharged from hospital to their own home;

- intervention must be at least one TFU call initiated by a hospital-based health professional and, in principle, directed to the patients themselves;
- intervention has to take place at least once within the first month after hospital discharge;
- outcomes have to be measured at least once within the first three months after hospital discharge; and
- if the TFU is part of multi-component intervention, the study reports data on the effects of the TFU-component, or its effects can be isolated and analysed to some degree.

For each study the criteria were judged from top to bottom; from the moment a criterion was not met no further assessment was made relating to the subsequent criteria.

At this second stage, all studies were checked by two review authors independently. Inter-rater agreement in this process was 94% with a kappa-coefficient of 0.75. We resolved disagreement on inclusion or exclusion was resolved by discussion. If no agreement could be reached, it was planned a third author would decide.

The process of searching and assessing studies against the review's inclusion criteria resulted in a set of 39 articles, describing 32 studies. We conducted a forward search with these 39 references in the combined Social and Science Citation Index (search date: 4 September 2004). The 39 references were cited 293 times in 223 different articles, of which 66 were already in the data-set of 2003. The remaining 157 references were checked against the inclusion criteria. Only one study (Tranmer 2004) met the criteria and was added to the final set of included studies, bringing the total to 33 included studies discussed in 40 papers. We present the inclusion process schematically at Figure 1.

The main reasons for the exclusion of studies were as follows: the study did not present results from a (randomised) controlled trial (37%); the study did not concern patients discharged from hospital (30%); the intervention under investigation was not TFU (12%); or the study did not meet the other inclusion criteria. We provide additional details in the table Characteristics of excluded studies.

Stage 3: data extraction

We developed a data extraction sheet (based on the Cochrane Consumers and Communication Review Group's data extraction template), pilot-tested it on ten randomly-selected included studies, and refined it accordingly. One review author (PM) extracted the following data from included studies and the second author (EP) checked the extracted data:

- study population (diagnosis, co-morbidities, hospital procedures, age, gender-ratio, length of stay, family support, inclusion and exclusion criteria);
- study environment (type of hospital, country);
- study methods (design, randomisation procedure);
- intervention (provider, structure, content, time, frequency, duration, who answered the phone (patient or relative));
- co-interventions (discharge preparation, other forms of aftercare);
- control intervention (usual care description, TFU by others);
- outcomes (type of outcome, measurement tool (type, psychometrics), timing and frequency of assessment);
- results (mean and range at the different measurement moments post discharge, for both experimental and control group);
- conclusions (as stated by the study authors);
- limitations of study and other remarks.

Disagreements were resolved by discussion between the two review authors; if no agreement could be reached, it was planned a third author would decide.

We contacted five authors (Boter 2000; Gortner 1990; Hartford 2002; Jerant 2001; Ouellet 2003) for further information. All responded and one (Hartford 2002) provided numerical data that had only been presented graphically in the published paper.

Stage 4: assessment of methodological quality

We assessed the methodological quality of included studies using the criteria from the Cochrane Effective Practice and Organisation of Care Review Group (Alderson 2002). This list contains seven criteria to evaluate randomised controlled trials (RCTs) and controlled clinical trials (CCTs): concealment of allocation, follow-up of professionals, follow-up of patients, blinded assessment of primary outcomes, baseline measurement, reliable primary outcome measures, and protection against contamination. Further, as outlined in the Cochrane Handbook (Clarke 2003), we grouped studies into three categories: A (low risk of bias = all criteria met), B (moderate risk of bias = at least four of the criteria met) and C (high risk of bias = less than four of the criteria met).

Two review authors conducted the quality assessment independently. Disagreements were resolved by discussion between the two review authors; if not agreement could be reached, it was planned a third review author would decide. In some cases an editor of the Cochrane Consumers and Communication Review Group had input to clarifying the quality assessment for particular studies.

The EPOC quality assessment rating of each study can be found in the table Characteristics of included studies.

The quality of included studies was used to inform the discussion of the review's findings.

Stage 5: analysis

The primary analysis was a comparison of TFU with usual care or with other types of hospital follow-up, for each of the questions outlined in the review's objectives.

We grouped studies in different ways: according to similarity of intervention, according to broad groups of patient populations (eg. all cardiac patients, all surgery patients) and according to the outcomes measured. The broad groupings of patient populations were based on the similarity of issues that these patients face when they are discharged from hospital. All comparisons that were attempted or made are narratively described and presented in graphs where possible. Since we expected to find significant heterogeneity in intervention modalities, research populations, outcomes and measurement tools, we only combined the study results statistically where appropriate and with inspection of the tests for homogeneity.

The meta-analytic technique depended on the outcomes reported. For all primary and secondary outcomes (excepting adverse

events, hospital readmission and health services utilisation), it was anticipated that the majority would be measured and reported as continuous data. For continuous data (which used the same instrument) the weighted mean difference (WMD) and 95% confidence intervals (CI) are reported. Where the studies have used different instruments to measure the same conceptual outcome, the standardised mean difference (SMD) is reported. In studies that report dichotomous data (eg. with regard to readmission), the relative risk (RR) and CIs are reported. We analysed all comparisons with both a fixed-effect and a random-effects model, but only the analyses with the random-effects model are presented. We paid particular attention to the possible heterogeneity in studies and the consequences of this for interpreting the results.

If appropriate, we had planned to conduct subgroup analyses:

- for gender;
- for age group (children/adults/old/old-old);
- for living status (alone/together);
- for the different healthcare professionals delivering the TFU;
- for types of hospital (university, general,..);
- for countries;
- for TFU after one-day-stay procedures versus TFU after more than one day hospital stays;
- for TFU after short hospital stays (<1 week) versus TFU after longer hospital stays;
- for TFU as the only form of discharge care versus TFU as part of multi-component discharge procedures;
- for TFU given in the first week after discharge versus TFU given later than the first week after discharge;
- for TFU in which only patients themselves were involved versus TFU in which relatives answered the telephone (due to the patient's inability);
- for TFU given as a once-only intervention versus repeated TFU; and
- for TFU given to different patient categories according to the medical diagnosis or health status (eg. severe, end of life, etc.).

We had also planned to conduct sensitivity analyses by repeating the analyses excluding studies with a 'C' methodological rating, by excluding unpublished studies, and by excluding studies with extreme outlying sample sizes. However, we could not perform the intended subgroup-analyses and sensitivity analyses as too few studies were available. Consequently, we can not report any meaningful results in relation to factors that may influence the outcomes.

We were not able to report on results separately for studies where the TFU was (partly) delivered to relatives/caregivers, such as in cases where the patient has severe Alzheimer's Disease, due to lack of data.

Consumer views and participation

The protocol was submitted to three participating consumers in the Cochrane Consumers and Communication Review Group for comment, in addition to the Review Group's usual external peer review process. We sought and received additional commentary from consumers in preparing the text of the final review, through the Dutch Patients and Consumers Federation (NPCF) and the Patients' Association (UK).

RESULTS

Description of studies

Details of each study can be found in the table Characteristics of included studies. (Blanks under a heading mean there was no information on that item in the trial report.)

TFU is an intervention that is often applied and researched in discharged patients. For this review, we selected studies in which TFU was the only intervention, or in which the effect of the TFU could be differentiated from other interventions. TFU is often combined with other discharge planning interventions, as shown in several of the included studies (Al-Asseri 2001; Barnason 1995; Beckie 1989; Faulkner 2000; Garding 1988; Gortner 1990; Hagopian 1990; Jerant 2001; Mohan 1999; Munro 1994).

The main reasons for excluding studies were: study design (not a (randomised) controlled trial), participants (not about patients discharged from an hospital to their own home or not about a telephone follow-up initiated by a hospital-based health professional), or the effects of TFU could not be calculated. For further details, see additional Figure 1 and the table Characteristics of excluded studies.

Patient categories

TFU has been applied in various patient categories, as follows:

- surgery (16) (Al-Asseri 2001; Barnason 1995; Beckie 1989; Boter 2000; Emerson 2000; Fallis 2001; Faulkner 2000; Gombeski 1993; Gortner 1990; Hartford 2002; Ouellet 2003; Roebuck 1999; Samarel 2002; Touyz 1998; Tranmer 2004; Weaver 2001);
- cardiac (12) (Al-Asseri 2001; Barnason 1995; Beckie 1989; Faulkner 2000; Garding 1988; Gortner 1990; Hartford 2002; Jerant 2001; Riegel 2002; Roebuck 1999; Tranmer 2004; Weaver 2001);
- emergency department (5) (Chande 1994; Jones 1988; Nelson 1991; Ritchie 2000; Shesser 1986);
- oncology (4) (Beney 2002; Hagopian 1990; Munro 1994; Samarel 2002);
- paediatric (3) (Chande 1994; Mohan 1999; Nelson 1991);
- neurology (2) (Phillips 1999,;Phillips 2001);
- ophthalmology (1) (Boter 2000);
- diabetes (1) (Tu 1993);
- general medicine (1) (Dudas 2001), and;
- mixed (1) (Bostrom 1996).

Some studies fall into more than one category, for example, cardiac surgery patients are included in the categories of cardiac patients and surgery patients; and studies including breast cancer patients who receive surgery and/or chemotherapy fall into both the oncology and surgery categories. The large variety in patient populations also means that there is considerable clinical heterogeneity in research samples, which made it difficult to pool results across studies. However, in some patient categories there are quite large numbers of studies, as shown above.

Further characteristics of the patient population such as age ranges, gender, race, socio-economic status and comorbidity can be found in the table Characteristics of included studies, insofar as this information was provided in the trial reports. There is

also considerable variety between and within studies in these population characteristics. Studies were all conducted in high-income countries (Australia, Canada, The Netherlands, Saudi Arabia, UK, USA). It is important to note that all studies included only patients who were able to speak (and moreover, able to speak the same language as the people delivering and evaluating the TFU intervention) and handle a telephone, which makes the studies' conclusions less generalisable.

A total of 5110 patients is analysed in the 33 studies, varying in studies between 27 (Emerson 2000) and 842 (Jones 1988) with a mean of 154.8 patients per study (SD 162.4, median 118). Fifteen studies analysed less than 100 patients, twelve studies analysed between 101 and 200 patients, and six had more than 200 patients.

Intervention

There is a large variety in the way the TFU was performed in the included studies. There is variety both within and across studies in: the health professionals who undertook the TFU; the aims of the interventions; the time after discharge the calls were made; the frequency of TFU calls; the format and content of the TFU; the duration of the calls; and other aspects.

The TFU calls were made primarily by nurses (22 studies). Other professionals involved were pharmacists (Al-Asseri 2001; Beney 2002; Dudas 2001; Faulkner 2000) and physicians (Chande 1994; Touyz 1998). In three studies (Munro 1994; Ritchie 2000; Samarel 2002) different professionals were involved in performing the TFU, and in two studies (Gombeski 1993; Mohan 1999) it was not clear which health professional delivered the intervention.

The aims of the TFU can roughly be grouped in two categories: 1) to improve compliance of patients with drug regimes or appointments; or 2) to ease the transition between hospital and home and to lessen experienced distress (such as anxiety, informational needs or symptom distress) of patients in the immediate postdischarge period, by enhancing their knowledge to better manage symptoms or by giving them support and reassurance. Generally, the study authors expect that achieving the aims will lead to improved patient satisfaction, better (experienced) quality of life, fewer complications and readmissions and less resource use. Almost all studies lacked a clear theoretical framework for relating the interventions to the aims and (sequence of) outcomes and endpoints.

The frequency and timing of the intervention delivery also varied. The frequency of calls made to patients within a three-month time period after discharge varied from a single call to a series of 32 calls (Samarel 2002). Single calls were used in 14 studies, between 2 and 5 calls were applied in 7 studies (Bostrom 1996; Garding 1988; Hagopian 1990; Munro 1994; Roebuck 1999; Tu 1993; Weaver 2001), 6 to 10 calls in 7 studies (Beckie 1989; Gortner 1990; Hartford 2002; Jerant 2001; Mohan 1999; Phillips 2001; Tranmer 2004) and more than 10 calls in 5 studies (Al-Asseri 2001; Faulkner 2000; Phillips 1999; Riegel 2002; Samarel 2002). In terms of frequency of calls there are differences both between and within studies. With regard to timing, the patient was first telephoned within the first week (varying between the first and the seventh day) after discharge in 28 studies. The latest time the first call to the patient was made was four weeks after discharge. There are not only differences in timing of intervention delivery between studies, but also within studies (for example, patients were called in the first week, or between the first and third day after discharge, or between week 2 and 4 after discharge).

Some studies used a highly structured format for the TFU, with written protocols and questions that had to be asked (for example, Boter 2000; Shesser 1986; Weaver 2001), while another (Fallis 2001) does not provide any details as to how the TFU was conducted. The other included studies lay somewhere between these extremes. All articles lacked a description of the intervention sufficiently detailed and clear as to allow replication of the intervention. The control intervention, moreover, was the subject of even less description, mostly listed unhelpfully as 'usual care'.

Outcomes

Many different outcomes, falling into several categories, were measured in these studies. The number of outcomes varied between one and six per study, with a mean of 2.5 outcomes. In total, 82 outcomes were measured in the 33 included studies. (We present a more detailed list of studies categorised by outcomes in the Results section.)

Psychosocial health outcomes were measured in 20 studies. The most frequently measured outcome in this area was patient satisfaction (11), followed by anxiety (4) and depression (3). Other outcomes related to psychosocial health are: informational needs, uncertainty, mood state, coping, well-being, mental status, concerns, emotional functioning, mood disturbance, and (dimensions of) quality of life.

Physical health outcomes were measured in 10 studies. These included: activity level, functional limitations, independence, functional well-being, physical status, physical well-being, recovery, self care, self-care deficits, self efficacy, symptoms, pain, analgesic use, blood glucose level, lipid profiles, and tracking/diagnosing pressure ulcers. Although some of these outcomes are conceptually related, the authors gave them different names. Moreover, in general, self-developed instruments were used to measure these outcomes and no two instruments were sufficiently similar to enable comparison or pooling of the results across studies.

Other consumer-oriented health outcomes were measured in 14 studies. These concerned compliance (7), knowledge (4), social functioning & loneliness (1), symptom distress (1) and side-effects (2). (In the protocol for this review, we used the term 'adherence'. However, since all publications use the word 'compliance', we chose to use this term in the reporting of results.)

Health-services-oriented outcomes were measured in 11 studies; these considered readmissions (10), Emergency Department (ED) visits (5), unnecessary return office visits, calls to hospital and costs.

Outcomes not only varied across studies, but even when quite similar outcomes were measured in more than one study, in most cases different instruments were used.

Risk of bias in included studies

Twelve (Beckie 1989; Beney 2002; Boter 2000; Faulkner 2000; Gortner 1990; Hartford 2002; Jerant 2001; Jones 1988; Mohan 1999; Nelson 1991; Ritchie 2000; Tranmer 2004) of the 33 studies fulfilled the (strict) criteria of a randomised controlled design according to EPOC's guidelines (Alderson 2002). We describe the remaining 21

studies as controlled clinical trials (CCTs), primarily because we could not be certain, from the papers, whether there definitely was prospectively random allocation to intervention and control groups. Self-developed instruments were used for most outcomes; psychometric quality was doubtful for most instruments. Power calculation had been done in 15 of the 33 studies. Keeping in mind the low average sample sizes there is a great chance that studies were underpowered, and effects that in reality exist were not detected.

Two review authors independently assessed the methodological quality of included studies using the EPOC criteria (Alderson 2002). The mean quality score of the first author was 2.5 and for the second author was 2.6, which was not significantly different (P = 0.72). The two authors initially agreed on the methodological quality categories for 22 of the 33 included studies; the remaining 11 studies were discussed until the authors reached agreement. This resulted in 7 studies categorised as having a 'moderate risk of bias' (Beney 2002; Garding 1988; Hartford 2002; Jerant 2001; Nelson 1991; Ritchie 2000; Tranmer 2004), and the remaining 26 studies categorised as having a 'high risk of bias'. The EPOC quality criteria most often not met were: 'reliable primary outcome measures' (29/33), concealment of allocation (25/33), blinded assessment of primary outcomes' (22/33), 'baseline measurement' (15/33), protection against contamination (15/33), and follow-up of patients (9/33).

In summary, most of the studies included in this review have a high risk of bias, based on the published reports.

Effects of interventions

In 12 studies (Barnason 1995; Beney 2002; Bostrom 1996; Boter 2000; Hagopian 1990; Mohan 1999; Munro 1994; Ouellet 2003; Phillips 1999; Roebuck 1999; Tranmer 2004; Weaver 2001) the study authors conclude they found no statistically significant differences between TFU and control groups. No author reported negative effects of the TFU intervention. The authors of 21 studies conclude in favour of the TFU. It must be noted that in two studies (Emerson 2000; Gombeski 1993) the conclusions are only supported with tendencies to significance (P values that are close to 0.05). Moreover, these conclusions are sometimes only supported by significant differences later than three months after discharge, that is, outside the inclusion criteria for the review (Faulkner 2000; Jerant 2001; Phillips 2001). Of the 82 outcomes measured across the 33 studies, study authors report significant differences in favour of the TFU for 25 outcomes within the 3-month time period.

Overall findings reported by quality of studies

Categorised by methodological quality: in the 7 studies with moderate risk of bias, 18 outcomes were measured within 3 months post discharge. Of these, four studies revealed significant results (all in favour of the TFU-group) namely for knowledge (Garding 1988), for anxiety (Hartford 2002), and for compliance (Nelson 1991; Ritchie 2000). In the 26 studies with high risk of bias, 65 outcomes were measured of which 21 outcomes showed significant differences all in the favour direction for the TFU group, namely for satisfaction (Dudas 2001; Fallis 2001; Shesser 1986), for compliance (Al-Asseri 2001; Chande 1994; Jones 1988), for readmissions (Beckie 1989; Riegel 2002), for anxiety (Beckie 1989), for patient concerns (Fallis 2001), for mood disturbance (Samarel 2002), for activity level (Gortner 1990), for pain (Touyz 1998), for analgesic use (Touyz 1998), for selfcare deficits (Tu 1993), for self-efficacy (Gortner 1990), for knowledge (Beckie 1989), for calls to the hospital (Beckie 1989), for Emergency Department (ED)-visits (Dudas 2001), for drugs-related side-effects (Al-Asseri 2001) and for costs (Riegel 2002)).

Although satisfaction was not explicitly stated in our review protocol as an outcome, we did not want to exclude it because it was the most frequently measured outcome (11 studies); as noted in the Objectives, satisfaction has been added into the category of psychosocial health outcomes.

It was not possible to present results grouped by similar TFU interventions, as we had planned, because of heterogeneity in the interventions, and also lack of detailed information about the interventions. We have presented results grouped by outcomes measured, and by similar patient populations, as we had planned.

Results by outcome category

Psychosocial outcomes

Twenty studies measured some kind of pyschosocial health outcome (Al-Asseri 2001; Barnason 1995; Beckie 1989; Beney 2002; Bostrom 1996; Boter 2000; Dudas 2001; Fallis 2001; Gombeski 1993; Gortner 1990; Hagopian 1990; Hartford 2002; Jerant 2001; Munro 1994; Phillips 2001; Roebuck 1999; Samarel 2002; Shesser 1986; Tranmer 2004; Weaver 2001). Five of these studies (Beckie 1989; Dudas 2001; Fallis 2001; Hartford 2002; Shesser 1986) found favourable results in this outcome category for the TFU intervention group, namely for anxiety, satisfaction or concerns. With respect to satisfaction, however, in contrast to the three studies showing favourable effects (Dudas 2001; Fallis 2001; Shesser 1986), eight studies find no differences between intervention and control groups. Similarly, with respect to anxiety there are two studies (Beckie 1989; Hartford 2002) showing the intervention has positive effects and two studies (Hagopian 1990; Roebuck 1999) showing no difference.

Physical outcomes

Physical health outcomes were measured in ten studies (Beney 2002; Boter 2000; Gortner 1990; Hagopian 1990; Jerant 2001; Ouellet 2003; Phillips 1999; Touyz 1998; Tranmer 2004; Tu 1993). Seven of these found no differences between the intervention and control groups. However Gortner 1990 found effects in favour of the TFU group for activity level and self-efficacy; Touyz 1998 for pain and analgesic use; and Tu 1993 for self care deficits.

Other consumer-related outcomes

Other consumer-related outcomes were measured in 14 studies (Al-Asseri 2001; Barnason 1995; Beckie 1989; Beney 2002; Chande 1994; Faulkner 2000; Garding 1988; Hagopian 1990; Jones 1988; Mohan 1999; Nelson 1991; Ritchie 2000; Samarel 2002; Tu 1993). Compliance was found to be enhanced for the TFU group in five studies (Al-Asseri 2001; Chande 1994; Jones 1988; Nelson 1991; Ritchie 2000. With the exception of Al-Asseri 2001 these concern ED patients who received a single call very shortly after their ED attendance, in which they were reminded of instructions and to make an appointment with their referral doctor. Two studies (Faulkner 2000; Mohan 1999) found no differences in this compliance between groups. Knowledge was better for the TFU group in two studies (Beckie 1989; Garding 1988) and no differences in knowledge between the groups were found in two other studies (Barnason 1995; Tu 1993). Samarel 2002 assessed

social functioning and loneliness, and found clinically equivalent results for the intervention and control group. Beney 2002 studied symptom distress and found no significant differences. Severity of side-effects of the radiotherapy, as studied by Hagopian 1990, was similar for both groups. Al-Asseri 2001 assessed the number of patients reporting drug-related side effects and found a significantly smaller number of patients reporting such side effects in the TFU group.

Health services related outcomes

Health services related outcomes were measured in 11 studies (Beckie 1989; Bostrom 1996; Dudas 2001; Emerson 2000; Fallis 2001; Ouellet 2003; Phillips 1999; Phillips 2001; Riegel 2002; Tranmer 2004; Weaver 2001). Two studies identified fewer readmissions in the intervention group (Beckie 1989; Riegel 2002) while eight studies found no differences. One study found fewer emergency department visits for the TFU group (Dudas 2001), however four studies (Fallis 2001; Ouellet 2003; Tranmer 2004; Weaver 2001) did not identify differences in this respect.

It should be noted that although we examined the studies for adverse effects of the TFU intervention, no author reported them. However, it is unclear whether study authors sought to identify adverse effects and included these outcomes in their research protocols.

Results of data pooling

We selected outcomes and patient categories for which data could be pooled quantitatively. Such pooling was only considered if similar outcomes (for example, anxiety, as a subcategory of psychosocial outcomes) were measured in at least two studies in a similar patient group (for example, patients with a cardiac condition or patients who had undergone surgery). Table 1 shows the outcomes and patient categories for which this criterion was met. (Note: cells in this table are not necessarily mutually exclusive, for instance studies of patients who had undergone cardiac surgery appear in the table under the categories of cardiac patients and of surgery patients). As outlined in the Cochrane Handbook (Clarke 2003), meta-analysis should only be considered when a group of trials is sufficiently homogeneous in terms of participants, interventions and outcomes to provide a meaningful summary. In each outcome and patient category the measurement time had to be similar, and the scales used had to be either similarly continuous or similarly dichotomous. Above all, in each category we determined whether there was sufficient clinical homogeneity to warrant data pooling. We discuss these comparisons below for each combination from Table 1.

As far as pooling was attempted, for continuous outcomes we used standardised means differences (SMDs) and a random-effects model; for dichotomous data, we used relative risks and a random-effects model. Confidence intervals were set at 95%. In all comparisons, tests were performed with regard to statistical homogeneity; this was judged (following the Cochrane Handbook (Clarke 2003)), to be acceptable, as the chi-square test value was lower than the degrees of freedom, the P value of it was above 0.1 and the inconsistency test I^2 was lower than 50%. Finally, due to the earlier described heterogeneity in patient populations, research tools, and intervention modes, and due to the predominately low methodological quality of the studies, we stress that all reported meta-analyses have to be considered with caution.

Comparisons related to psychosocial health outcomes

A) Effect of TFU on anxiety in cardiac surgery patients at approximately one month after discharge compared to usual care
Three studies measured anxiety in cardiac patients (Beckie 1989; Hartford 2002; Roebuck 1999). Two studies (Beckie 1989; Roebuck 1999) were rated as having a high risk of bias and one (Hartford 2002) as having a moderate risk of bias. All three studies involved people undergoing cardiac surgery. Anxiety was measured at a reasonably similar point in time (four and eight weeks (Hartford 2002) (data from the measurement at four weeks was used for the meta-analysis), five weeks (Roebuck 1999), and six weeks (Beckie 1989)). Three different measurement tools were used, all measuring continuous outcomes. Pooling showed a standardised mean difference of -0.47 (95% CI -1.28 to 0.34), which means both approaches are clinically equivalent (see Comparison 01, Outcome 01). However, caution is needed since tests demonstrated large statistical heterogeneity.

B) Effect of TFU on satisfaction in cardiac (medical and surgical) patients compared to control condition
This comparison potentially involved five studies (Al-Asseri 2001; Barnason 1995; Jerant 2001; Tranmer 2004; Weaver 2001). All applied different instruments. Barnason 1995, Tranmer 2004 and Weaver 2001 measured satisfaction at approximately one month, using some kind of continuous measurement. Weaver 2001 did not present raw data and said only that there were no statistical differences. Barnason 1995 and Tranmer 2004 used different control groups, but both found no differences. Al-Asseri 2001 and Jerant 2001 measured the outcome at two months post discharge. Al-Asseri 2001 used a dichotomous outcome measure and Jerant 2001 a continuous one, which makes pooling difficult; neither found statistical differences. Heterogeneity between the studies in terms of instruments used, control groups and timing of measurement, meant that pooling could not be performed.

C) Effect of TFU on satisfaction in surgery patients
Six studies measured satisfaction in surgery patients: Al-Asseri 2001 (cardiac surgery), Barnason 1995 (cardiac surgery), Fallis 2001 (laparoscopic cholecystectomy), Gombeski 1993 (general surgery and otolaryngoly), Tranmer 2004 (cardiac surgery), and Weaver 2001 (cardiac surgery). Fallis 2001 measured satisfaction at two days post discharge, Barnason 1995, Tranmer 2004 and Weaver 2001 measured this outcome at approximately one month, Gombeski 1993 at six weeks and Al-Asseri 2001 at two months. Therefore statistical pooling was not possible due to heterogeneity in measurement times. Five studies found no differences in satisfaction and only Fallis 2001 concludes that the TFU group is statistically more satisfied. This study used a chi-square test for a continuous outcome, however, and the author states that the results should be viewed with caution because of small cell sizes.
In conclusion, with regard to satisfaction in surgery patients, statistical pooling was not possible, and no single study identified favourable effects for the TFU group compared with the control groups.

D) Effect of TFU on depression in cardiac surgery patients
The next potential comparison concerns depression in cardiac surgery patients. Two studies measured this outcomes in cardiac surgery patients (Roebuck 1999; Weaver 2001). In one study the outcome was measured at one month and in the other at five weeks post discharge. These studies used two different instruments, both with a continuous scale. However, Weaver 2001 only presents a

dichotomised result, which makes pooling impossible. Both studies found no statistically significant differences between intervention and control groups with regard to depression in cardiac surgery patients.

Comparisons related to physical health outcomes

No statistical pooling was possible in this category, as too few studies measured comparable outcomes.

Comparisons related to other consumer-oriented health outcomes

In this category, we examined compliance in several patient groups, as well as knowledge in cardiac patients.

E) Effect of TFU on compliance in cardiac surgery patients compared to usual care

Al-Asseri 2001 and Faulkner 2000 studied compliance with pill-taking in cardiac surgery patients. Al-Asseri 2001 and Faulkner 2000 were both rated as having a high risk of bias. Al-Asseri 2001 measured this outcome at 8 weeks, and Faulkner 2000 at 6 and 12 weeks after discharge. Both used dichotomous scales. For the meta-analysis, data of 6 and 8 weeks are combined; the combined effect is statistically not significant (RR 1.68, 95% CI 0.59 to 4.78) (see Comparison 02, Outcome 02). However, caution has to be taken in the interpretation of this pooling because tests demonstrated large statistical heterogeneity.

F) Effect of TFU on compliance (making and keeping an appointment) in ED patients compared to usual care

Four studies measured compliance in ED patients (Chande 1994; Jones 1988; Nelson 1991; Ritchie 2000). Nelson 1991 and Ritchie 2000 are studies with a moderate risk of bias; the others have a high risk of bias. Chande 1994 measured compliance by asking if patients had called their primary care physician and if they had filled their prescriptions. Jones 1988 measured compliance with scheduling and keeping an appointment. Nelson 1991 measued compliance by the appropriate use of follow-up care, including keeping appointments, following instructions, using the primary care centre rather than the ED for non-urgent care, and using the telephone prior to or instead of coming to the hospital for an unscheduled visit. Ritchie 2000 measured compliance in making and attending appointments. The two common points in these four studies, suitable for data pooling, are making an appointment/calling the doctor (Chande 1994; Jones 1988; Ritchie 2000) and keeping an appointment (Jones 1988; Nelson 1991; Ritchie 2000). All four studies measured these outcomes retrospectively at different points in time, but this does not hinder comparison since they all measured making/keeping appointments that were considered to be necessary. All four studies had usual care as control condition. Jones 1988 used two additional control groups (but only the usual care control groups are taken in consideration for this comparison). The meta-analyses show effect estimates in support of the TFU intervention group, both for making an appointment (RR 1.70, 95% CI 0.92 to 3.14) (see Comparison 02, Outcome 02) and for keeping an appointment (RR 1.58, 95%CI 1.01 to 2.48) (see Comparison 02, Outcome 03). However, confidence intervals for both poolings are large and tests show considerable statistical heterogeneity.

G) Effect of TFU on compliance in paediatric patients

Compliance in paediatric patients was studied by Chande 1994, Mohan 1999 and Nelson 1991; two of these studies concern paediatric patients attending the ED and the other concerned infants requiring apnea monitoring. These samples are considered too clinically heterogeneous and were not pooled; moreover the studies of paediatric patients in the ED (Chande 1994; Nelson 1991) are already included in comparison F) above.

H) Effect of TFU on knowledge in cardiac patients compared to control condition

Three studies measured knowledge in cardiac patients (Barnason 1995; Beckie 1989; Garding 1988). Garding 1988 was rated as having a moderate risk of bias; the others as having a high risk of bias. Barnason 1995 and Beckie 1989 involve cardiac surgery patients and Garding 1988 cardiac patients who have been hospitalised for an acute myocardial infarction. All three studies used self-developed instruments of which two (Beckie 1989; Garding 1988) were based on an earlier instrument of Horn and Swain. Beckie 1989 and Garding 1988 had usual care as comparison, while Barnason 1995 used two control groups (one received in-hospital teaching only, the other in-hospital teaching plus post discharge group teaching; for this meta-analysis we used data from the in-hospital teaching only control group). It is not exactly clear when the outcomes were measured, but all had to be at around four to eight weeks post discharge. The meta-analysis did not reveal a statistically favourable effect for the TFU (SMD 1.44, 95%CI -0.25 to 3.13) (see Comparison 03, Outcome 01), but here also tests show considerable statistical heterogeneity.

Comparisons related to health services oriented outcomes

In this section, pooling was possible for readmission data in three patient categories, and for ED visits in surgery patients.

I) Effect of TFU on readmissions in cardiac patients compared to usual care

Readmissions in cardiac patients were studied by Beckie 1989, Riegel 2002, Tranmer 2004 and Weaver 2001. Tranmer 2004 was rated as having a moderate risk of bias; the others were rated as having a high risk of bias. Riegel 2002 involved medical patients with heart failure, and the other studies involved cardiac surgery patients. Three measured readmissions by status analysis of hospital records, and one (Tranmer 2004) by patient self-report. One retrospected the first month, the second the first five weeks, the third the first six weeks and the fourth one the first three months, so possible variations between studies can be attributed to the time period, but the effects do not hamper comparisons between intervention and control. Since Weaver 2001 does not differentiate between ED visits and readmissions, this is excluded from the analysis. The pooled effect is not statistically significant (RR 0.75, 95%CI 0.41 to 1.36) (see Comparison 04, Outcome 01). Tests for statistical homogeneity are within an acceptable range.

J) Effect of TFU on readmissions in surgery patients compared to control condition

Readmissions in surgery patients were studied by Beckie 1989, Fallis 2001, Ouellet 2003, Tranmer 2004 and Weaver 2001. Only Tranmer 2004 was rated as having a moderate risk of bias; the others are at high risk of bias. Both Beckie 1989 and Tranmer 2004 were also included in comparison I, above. Four studies had usual care as comparison group; Fallis 2001 compared the TFU group to a home visit by a nurse. Three studies measured the outcome at four weeks post discharge, one at five weeks and one at six weeks. Ouellet 2003 is problematic in that the author only states

that there were four readmissions in the total group and that there were no significant differences, but does not present exact data for both groups; for the meta-analysis we used two readmissions in the treatment group and two in the control group for this study. Again, as Weaver 2001 does not differentiate between ED visits and readmissions this study's data is excluded from this comparison. The pooled effect is not significant (RR 0.65, 95% CI 0.28 to 1.55) (see Comparison 04, Outcome 02) and tests for statistical homogeneity are within an acceptable range.

K) Effect of TFU on readmissions in neurology patients

Readmissions in neurology patients are studied by Phillips 1999 and Phillips 2001 (in spinal cord injury patients). However readmission rates were measured over the first year and not specified for the time frame of 3 months as required for this review.

L) Effect of TFU on ED visits in surgery patients compared to control condition

The final potential meta-analysis for this review concerns surgery patients' visits to the ED ,which has been studied by Fallis 2001, Ouellet 2003, Tranmer 2004 and Weaver 2001. However Ouellet 2003 summarised ED visits together with unanticipated clinic visits and does not present specific data for ED visits, (either for the control or the intervention group) and so can not be included in this comparison. Also Weaver 2001 does not differentiate between ED visits and readmissions, and so is also excluded from the analysis. Data from Fallis 2001 and Tranmer 2004 were pooled (Fallis 2001 rated as having a high risk of bias. and Tranmer 2004 a moderate risk of bias). Tranmer 2004 had usual care as comparison group and Fallis 2001compared the TFU group to a home visit by a nurse. The pooled effect is not significant (RR 1.47, 95% CI 0.85 to 2.53) (see Comparison 05, Outcome 01). Tests for statistical homogeneity are within an acceptable range.

DISCUSSION

This review included 33 studies measuring the effects of telephone follow-up (TFU) in 5110 patients. The poor methodological quality of the included studies is a major limitation of this review. No included study had a low risk of bias, Seven had a moderate risk of bias and 26 had a high risk of bias. Moreover this review deals with a high degree of clinical diversity and statistical heterogeneity in several elements, and most studies have small sample sizes. Together, this means that drawing conclusions is very difficult, and any conclusions cannot be stated firmly.

In terms of our primary outcomes, we can draw no firm conclusions. Many different outcomes have been measured in the included studies, but only a few outcomes are measured more than one study. Moreover, many outcomes in this field are poorly defined. They are based on different and poorly described conceptual foundations. Many terms are used for the same phenomenon. There are many overlapping terms. Measurement instruments vary and are often unvalidated.

The fact that few outcomes were measured across more than one study made only limited pooling possible. As far as meta-analysis was possible, most comparisons suffered from considerable statistical heterogeneity and all pointed towards clinical equivalence.

There might be effects of the intervention which could not be shown. This may be due to poor methodological quality, (too) small sample sizes and/or insensitive instruments. We must question whether there was sufficient contrast in the studies: many studies compare TFU with usual care but do not describe what the usual care consisted of. Also, it is important to consider the extent to which patients may have received discharge preparation in hospital. It is possible that lack of contrast masks the effect of a TFU intervention.

The large heterogeneity in the interventions might also partly explain the lack of effects. Variety was evident in the people who delivered the TFU intervention, as well as in the frequency, duration, starting time, structure, and aims, and in other aspects. The extent to which the intervention is comparable across and within the studies is questionable. It seems that there is no agreement about the critical elements of an effective TFU intervention. The heterogeneity can also partly be explained by the different aims of the TFU intervention: enhancing compliance with referrals might require one form of TFU, and reducing anxiety and uncertainty, or improving a patient's knowledge of their symptoms, another form. Moreover, many studies combined several of these aims. Narrowing the inclusion criteria for this review would have improved the homogeneity of the included studies, but would have resulted not only in a very small number of included studies being identified, but also in 'laboratory' studies which do not reflect real world circumstances.

TFU can be regarded as a 'socially complex intervention', a term used by Lindsay (Lindsay 2004) to denote interventions that are characterised by actions that are difficult to define, and by varied, and difficult to control, contextual factors. Both TFU and the comparison interventions are dependent on individual professionals, individual patients, social interactions and social settings, which makes it hard to define, to standardise and to adequately describe what is being done. Many factors, therefore, may mask the effects.

Another point of discussion is given by the study of Faulkner 2000. The author found no significant differences in compliance in the short term (3 months) but did find differences after that period up to two years later. We should consider whether three months is too early to see the effects of TFU - but is two years realistic?

It should also be noted, however, that none of the included studies show effects in favour of the control group. Moreover, some of the studies report that patients value the TFU calls, although it seems remarkable that this is not reflected in the measured empirical outcomes. We must question, therefore, whether the scales are the right ones to measure the effects, and whether the measurement tools are sensitive enough. Also, we note that some individual studies found effects in favour of the TFU group. The Dutch Patients and Consumers Federation commented (during the preparation of this review) that patients' appreciation of the call indicates that TFU deserves a place in aftercare. To stop TFU based on the lack of firm conclusions in this review, may be to throw the baby out with the bath water. However, we strongly emphasise that questions remain about: the ideal person to deliver the intervention; the best time to start TFU; the number of follow-up calls needed and the ideal period of time for their delivery; the ideal structure and content of TFU, a possible need for variations in TFU for different patient categories; differences across countries and health systems, the nature and timing of effects to be expected of TFU, and many other issues. We need large scale, high quality studies with more comparable (and better reported) interventions and

with sufficiently sensitive validated tools, in order to answer these questions.

AUTHORS' CONCLUSIONS

Implications for practice

Some individual studies included in this review identify some effects in favour of telephone follow-up (TFU), and no study reported adverse effects of the intervention. Nevertheless we cannot conclude that TFU is an effective intervention. Nor is there conclusive evidence to exclude TFU from discharge planning activities.

Implications for research

Research in this field should focus on the many questions as stated in the discussion. Clear and detailed descriptions of the strategies in both the intervention and control arms are needed. We note also the poor methodological quality of the included studies. For instance the criterion of reliable outcome measurement was frequently not met because outcomes were not assessed by two people, and consequently interrater agreement could not be reported; this is something that easily can be resolved. The same applies for the criteria blinded assessment of outcomes and concealment of allocation, which can quite easily be met by increased rigor in research protocols. There remain many challenges ahead, for instance to develop adequately sensitive instruments for the outcomes that can be addressed by TFU. Improved theoretical exploration of the relationship between interventions and outcomes is needed: what and when effects may be expected of TFU, and what instruments are suitable and sensitive enough to measure them? There is a need for large scale, well-designed studies with uniform and well-described interventions and outcomes.

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Protocol:

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Review:

- Ms. Judy Stoelwinder, Consumers and Communication Review Group, assisted with the search strategies for this review.
- Ms. Anne Vicky Carlier, Netherlands Institute for Health Care Services Research, performed all interlibrary loans.
- Mr. Rob Scholten, Dutch Cochrane Center, checked the statistical analyses.
- Ms. Atie Schipaanboord commented on the text of the review from the perspective of the Dutch Patients and Consumers Federation.
- Mr. Jouke van der Zee and Ms. Anneke Francke, Director and Program Coordinator of the Netherlands Institute for Health Care Services Research, gave general scientific advice on the review.
- The scientific committee of the Netherlands Institute for Health Care Services Research commented the protocol and the text of the review.
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* Indicates the major publication for the study

CHARACTERISTICS OF STUDIES

Characteristics of included studies *[ordered by study ID]*

Al-Asseri 2001

Methods	DETAILS OF STUDY AIM OF INTERVENTION: whether post-discharge care counseling was a factor in improving patients' overall compliance with treatment in a hospital setting. AIM OF STUDY: To test whether counseling of surgical and cardiac patients by a pharmacist would improve patients' drug compliance. STUDY DESIGN: CCT. METHODS OF RECRUITMENT OF PARTICIPANTS: unclear. INCLUSION CRITERIA FOR PARTICIPATION IN STUDY: at least 3 medications and having a scheduled appointment at 8 weeks in hospital.

Al-Asseri 2001 *(Continued)*

	EXCLUSION CRITERIA FOR PARTICIPATION IN STUDY: mental illness. INFORMED CONSENT OBTAINED? yes. ETHICAL APPROVAL? unclear. FUNDING: unclear. ASSESSMENT OF STUDY QUALITY ALLOCATION CONCEALMENT: unclear. EPOC- QUALITY CRITERIA 2002: C.high risk of bias. METHOD OF GENERATING RANDOMISATION SCHEDULE: number assigned: odd number in control, even numbers in intervention. METHOD OF CONCEALMENT OF ALLOCATION: as above, no further information given. BLINDING: ·PARTICIPANTS: no. ·PROVIDER/S: no. ·OUTCOME ASSESSOR/S: no. INTENTION TO TREAT ANALYSIS: not stated. BASELINE COMPARABILITY OF INTERVENTION AND CONTROL GROUPS: not stated. STATISTICAL METHODS AND THEIR APPROPRIATENESS: chi-square. CONSUMER INVOLVEMENT: not stated.
Participants	DESCRIPTION : cardiac patients / surgery patients. GEOGRAPHIC LOCATION: Saudi Arabia. SETTING: discharged home from an acute care setting. NUMBER OF PARTICIPANTS: ELIGIBLE: unclear. RANDOMISED TO INTERVENTION: 36. RANDOMISED TO CONTROL: 36. INCLUDED IN ANALYSIS INTERVENTION GROUP: 36. INCLUDED IN ANALYSIS CONTROL GROUP: 36. AGE: RANGE OR MEAN (SD): 18-70. GENDER (% MALE): 50. ETHNICITY: unclear. PRINCIPAL HEALTH PROBLEM OR DIAGNOSIS: unclear. OTHER HEALTH PROBLEM/S: unclear. TREATMENT RECEIVED/RECEIVING: unclear. OTHER SOCIAL/DEMOGRAPHIC DETAILS: not given.
Interventions	DETAILS OF INTERVENTION: A pharmacist counseled patients on day of discharge about indication of drug use, expected therapeutic outcome, dosage and method of administration, storage conditions, duration of therapy and what to do when a dose is missed. The pharmacist gave TFU every 3 days for up to eight weeks; also patients could call pharmacist when they needed further counseling. DETAILS OF CONTROL: usual care.

Al-Asseri 2001 *(Continued)*

	CO-INTERVENTION? yes. DETAILS OF CO-INTERVENTIONS: access to the pharmacist by phone (in intervention group only) and counseling by pharmacist on discharge day (both groups). DELIVERY OF INTERVENTION: Frequency: 18. First time at day 3 after discharge. Period: 8 weeks (range 2 to 8) PROVIDERS: pharmacist. INTERVENTION QUALITY: unclear how much intervention was given in each patient. FIDELITY/INTEGRITY: unclear.
Outcomes	NUMBER OF OUTCOMES: 3. OUTCOME / TOOL / TOOL VALIDATED / METHOD OF ASSESSMENT / TIME OF ASSESSMENT: A.Psycho-social health of patients (uncertainty, anxiety, informational needs, mood, coping, quality of life, social activity, ..): satisfaction / self-developed / no / interview / 8 weeks after discharge. B.Physical health of patients (e.g. functional status, self-care, self-efficacy, independence, ..): C.Other consumer oriented outcomes (e.g. treatment adherence, knowledge, adverse events, ..): compliance / self-developed / no / interview / 8 weeks after discharge. Drugs-related side-effects / self-developed / no / interview / 8 weeks after discharge. D. Health service delivery oriented outcomes (eg. hospital readmission, health services utilization, ..):
Notes	·CHANGES IN TRIAL PROTOCOL ·CONTACT WITH AUTHOR ·POWER CALCULATION? ·RECORD IF THE STUDY WAS TRANSLATED FROM A LANGUAGE OTHER THAN ENGLISH. ·RECORD IF THE STUDY WAS A DUPLICATE PUBLICATION.

Risk of bias

Bias	Authors' judgement	Support for judgement
Allocation concealment?	Unclear risk	B - Unclear

Barnason 1995

Methods	DETAILS OF STUDY AIM OF INTERVENTION: to enhance knowledge. AIM OF STUDY: To examine the effectiveness of three 'survival skill' based teaching strategies for cardiac surgical patient education. STUDY DESIGN: CCT. METHODS OF RECRUITMENT OF PARTICIPANTS: unclear. INCLUSION CRITERIA FOR PARTICIPATION IN STUDY: admitted for elective coronary artery bypass surgery; not further specified. EXCLUSION CRITERIA FOR PARTICIPATION IN STUDY: not specified. INFORMED CONSENT OBTAINED? yes.

Barnason 1995 *(Continued)*

	ETHICAL APPROVAL? unclear. FUNDING: unclear. ASSESSMENT OF STUDY QUALITY ALLOCATION CONCEALMENT:unclear. EPOC- QUALITY CRITERIA 2002: C.high risk of bias. METHOD OF GENERATING RANDOMISATION SCHEDULE: not specified. METHOD OF CONCEALMENT OF ALLOCATION: not specified. BLINDING: ·PARTICIPANTS: no. ·PROVIDER/S: no. ·OUTCOME ASSESSOR/S: no. INTENTION TO TREAT ANALYSIS: not stated. BASELINE COMPARABILITY OF INTERVENTION AND CONTROL GROUPS: not stated. STATISTICAL METHODS AND THEIR APPROPRIATENESS: anova/t-test/chi-square. CONSUMER INVOLVEMENT: not stated.
Participants	DESCRIPTION : cardiac patients / surgery patients. GEOGRAPHIC LOCATION: USA. SETTING: discharged home from an acute care setting. NUMBER OF PARTICIPANTS: ELIGIBLE: unclear. RANDOMISED TO INTERVENTION: 30. RANDOMISED TO CONTROL: 30 - 30. INCLUDED IN ANALYSIS INTERVENTION GROUP: 30. INCLUDED IN ANALYSIS CONTROL GROUP: 30 - 30. AGE: RANGE OR MEAN (SD): 63.1 (9.8). GENDER (% MALE): 81. ETHNICITY: unclear. PRINCIPAL HEALTH PROBLEM OR DIAGNOSIS: coronary artery disease. OTHER HEALTH PROBLEM/S: unclear. TREATMENT RECEIVED/RECEIVING: coronary bypass surgery. OTHER SOCIAL/DEMOGRAPHIC DETAILS: 90% married. Average hospital stay of 6.2 days.
Interventions	DETAILS OF INTERVENTION: A teaching protocol was implemented during postdischarge week two by the cardiac rehabilitation nurse via telephone. The telephone contact was a method to reinforce the teaching content which had been previously given in the hospital. There were also opportunities for the patient to clarify any additional topics with the cardiac rehabilitation nurse. DETAILS OF CONTROL Two control groups: one received inhospital teaching only, the other inhospital teaching plus post discharge group teaching. CO-INTERVENTION? yes. DETAILS OF CO-INTERVENTIONS: All groups received inhospital teaching by the cardiac rehabilitation nurse on postoperative day 5 or 6; the content of this inpatient teaching protocol consisted on wound

Barnason 1995 *(Continued)*

	healing, signs and symptoms of angina/MI, guidelines for activity progression, incisional care, risk factor modification, dietary modifications and method for enrolling in cardiac rehabilitation. Patients also received two teaching booklets. DELIVERY OF INTERVENTION Frequency: 1. First time at day 7 to 14 after discharge. Period: PROVIDERS: nurse. INTERVENTION QUALITY: unclear. FIDELITY/INTEGRITY: unclear.
Outcomes	NUMBER OF OUTCOMES: 2. OUTCOME / TOOL / TOOL VALIDATED / METHOD OF ASSESSMENT / TIME OF ASSESSMENT A. Psycho-social health of patients (uncertainty, anxiety, informational needs, mood, coping, quality of life, social activity, ..): satisfaction / self-developed / partly, adopted from Gerard and Peterson's cardiac patient learning needs inventory / unclear / unclear, but in first month after discharge. B.Physical health of patients (eg. functional status, self-care, self-efficacy, independence, ..): C.Other consumer oriented outcomes (eg. treatment adherence, knowledge, adverse events, ..): knowledge / self-developed: heart disease management questionnaire / partly; Kuder-Richardson coefficient 0.36 / unclear / unclear, but in first month after discharge. D. Health service delivery oriented outcomes (eg. hospital readmission, health services utilization, ..):
Notes	·CHANGES IN TRIAL PROTOCOL ·CONTACT WITH AUTHOR ·POWER CALCULATION? ·RECORD IF THE STUDY WAS TRANSLATED FROM A LANGUAGE OTHER THAN ENGLISH. ·RECORD IF THE STUDY WAS A DUPLICATE PUBLICATION.

Risk of bias

Bias	Authors' judgement	Support for judgement
Allocation concealment?	Unclear risk	B - Unclear

Beckie 1989

Methods	DETAILS OF STUDY AIM OF INTERVENTION: to reinforce cognitive and affective information that was given to patients during hospitalisation and to supplement information about specific concerns/ AIM OF STUDY: To investigate the impact of supportive-educative telephone program on the levels of knowledge and anxiety of patients undergoing coronary artery bypass graft surgery during the first 6 weeks after hospital discharge. STUDY DESIGN: RCT. METHODS OF RECRUITMENT OF PARTICIPANTS: the first 74 patients scheduled.

Beckie 1989 *(Continued)*

	INCLUSION CRITERIA FOR PARTICIPATION IN STUDY: scheduled for first-time non emergency CABG/ oriented/ able to read, write and speak english/ access to telephone/ no major cardiac complications/ intent to return to cardiac surgeon within 6 weeks. EXCLUSION CRITERIA FOR PARTICIPATION IN STUDY: pyschiatric problems or history. INFORMED CONSENT OBTAINED? yes. ETHICAL APPROVAL? unclear. FUNDING: unclear. ASSESSMENT OF STUDY QUALITY ALLOCATION CONCEALMENT:unclear. EPOC- QUALITY CRITERIA 2002: C.high risk of bias. METHOD OF GENERATING RANDOMISATION SCHEDULE: not specified. METHOD OF CONCEALMENT OF ALLOCATION: not specified. BLINDING: ·PARTICIPANTS: no. ·PROVIDER/S: no. ·OUTCOME ASSESSOR/S: yes. INTENTION TO TREAT ANALYSIS: not stated. BASELINE COMPARABILITY OF INTERVENTION AND CONTROL GROUPS: yes. STATISTICAL METHODS AND THEIR APPROPRIATENESS: t-test. CONSUMER INVOLVEMENT: not stated.
Participants	DESCRIPTION :cardiac patients / surgery patients. GEOGRAPHIC LOCATION: Canada. SETTING:discharged home from an acute care setting. NUMBER OF PARTTICIPANTS: ELIGIBLE: 87. RANDOMISED TO INTERVENTION: 37. RANDOMISED TO CONTROL: 37. INCLUDED IN ANALYSIS INTERVENTION GROUP: 37. INCLUDED IN ANALYSIS CONTROL GROUP: 37. AGE: RANGE OR MEAN (SD): 50 to 70. GENDER (% MALE): 86. ETHNICITY: white. PRINCIPAL HEALTH PROBLEM OR DIAGNOSIS: coronary artery disease. OTHER HEALTH PROBLEM/S: none. TREATMENT RECEIVED/RECEIVING: coronary bypass surgery. OTHER SOCIAL/DEMOGRAPHIC DETAILS: 81% married/ 58% employed/ 57% rural homes/ 80% more than 10 years education
Interventions	DETAILS OF INTERVENTION: The supportive-educative telephone program was an interactive program involving information exchange between patient and the cardiac rehabilitation NURSE specialist through a series of 4 to 6 telephone calls initiated by the nurse during the first 6 weeks home conva-

Beckie 1989 *(Continued)*

	lescent period. The program was designed to assist patients to gain knowledge and improve decision making and coping skills, thereby decreasing their anxiety. A first call was made early in the first week after discharge in which the time and number of subsequent calls was made. DETAILS OF CONTROL usual care: group and individual teaching during hospital stay, visit of self help group member, information about cardiac rehabilitation program. CO-INTERVENTION? yes. DETAILS OF CO-INTERVENTIONS: usual care. DELIVERY OF INTERVENTION Frequency: 4-6. First time at day 3 after discharge. Period: 6 weeks. PROVIDERS: nurse. INTERVENTION QUALITY: good. FIDELITY/INTEGRITY: yes.
Outcomes	NUMBER OF OUTCOMES: 4 OUTCOME / TOOL / TOOL VALIDATED / METHOD OF ASSESSMENT / TIME OF ASSESSMENT A.Psycho-social health of patients (uncertainty, anxiety, informational needs, mood, coping, quality of life, social activity, ..): anxiety / state-anxiety inventory (Spielberger 1983) / yes / interview / 6 weeks after discharge. B.Physical health of patients (eg. functional status, self-care, self-efficacy, independence, ..): C.Other consumer oriented outcomes (eg. treatment adherence, knowledge, adverse events, ..): knowledge / self-developed / partly, based on instrument of Horn and Swain (1977) / unclear / 6 weeks after discharge. D. Health service delivery oriented outcomes (eg. hospital readmission, health services utilization, ..): readmission / hospital record / unclear / status analysis / 6 weeks after discharge calls to hospital / hospital record / unclear / status analysis / 6 weeks after discharge.
Notes	·CHANGES IN TRIAL PROTOCOL ·CONTACT WITH AUTHOR ·POWER CALCULATION? yes. ·RECORD IF THE STUDY WAS TRANSLATED FROM A LANGUAGE OTHER THAN ENGLISH. ·RECORD IF THE STUDY WAS A DUPLICATE PUBLICATION.

Risk of bias

Bias	Authors' judgement	Support for judgement
Allocation concealment?	Unclear risk	B - Unclear

Beney 2002

Methods	DETAILS OF STUDY AIM OF INTERVENTION: To improve patients' symptoms and/or side effects, such as delayed nausea and vomiting, as well as to detect and correct new symptoms that develop after discharge.

Beney 2002 *(Continued)*

AIM OF STUDY: To evaluate the effect of telephone follow-up on the physical well-being dimension of health-related quality of life in patients with cancer.

STUDY DESIGN: RCT.

METHODS OF RECRUITMENT OF PARTICIPANTS: all patients admitted within a 1 year period; informed consent obtained during hospital stay.

INCLUSION CRITERIA FOR PARTICIPATION IN STUDY: patients with hematologic or solid tumor malignancies/ chemotherapy/ speak English/ access to telephone.

EXCLUSION CRITERIA FOR PARTICIPATION IN STUDY: speech or hearing impairment/ mental or cognitive disorder/ live outside USA/ receiving weekly chemotherapy/ having allogeneic bone marrow transplant.

INFORMED CONSENT OBTAINED? yes.

ETHICAL APPROVAL? yes.

FUNDING: unclear.

ASSESSMENT OF STUDY QUALITY
ALLOCATION CONCEALMENT:adequate

EPOC- QUALITY CRITERIA 2002: B.moderate risk of bias.

METHOD OF GENERATING RANDOMISATION SCHEDULE: spreadsheet with a block size of 4.

METHOD OF CONCEALMENT OF ALLOCATION: each patient received a number and study assignment from the investigational pharmacist

BLINDING:
·PARTICIPANTS: no.
·PROVIDER/S: no.
·OUTCOME ASSESSOR/S: yes.

INTENTION TO TREAT ANALYSIS: yes.

BASELINE COMPARABILITY OF INTERVENTION AND CONTROL GROUPS: yes.

STATISTICAL METHODS AND THEIR APPROPRIATENESS: anova/t-test/chi-square/wilcoxon.

CONSUMER INVOLVEMENT: not stated.

Participants	DESCRIPTION: oncology patients. GEOGRAPHIC LOCATION: USA. SETTING: discharged home from an acute care setting. NUMBER OF PARTICIPANTS: ELIGIBLE: 161. RANDOMISED TO INTERVENTION: 76. RANDOMISED TO CONTROL: 57. INCLUDED IN ANALYSIS INTERVENTION GROUP: 66. INCLUDED IN ANALYSIS CONTROL GROUP: 57. AGE: RANGE OR MEAN (SD): 53 (14). GENDER (% MALE): 73. ETHNICITY: 87% Caucasian, PRINCIPAL HEALTH PROBLEM OR DIAGNOSIS: hematologic or solid tumor malignancy, OTHER HEALTH PROBLEM/S: none.

Beney 2002 *(Continued)*

	TREATMENT RECEIVED/RECEIVING: chemotherapy. OTHER SOCIAL/DEMOGRAPHIC DETAILS: 44% inpatient/mean Karnofsky score 83
Interventions	DETAILS OF INTERVENTION: TFU 48-72 hours after discharge by PHARMACIST. During the call patients were asked if they had experienced any problems since discharge. Information was solicited on both drug-related and non-drug related problems. When appropriate, patients were given advice, support and reinforcement of education provided at the time of discharge, and appropriate follow-up was recommended. DETAILS OF CONTROL: usual care. CO-INTERVENTION? no. DETAILS OF CO-INTERVENTIONS: usual care. DELIVERY OF INTERVENTION Frequency: 1. First time at day 2-3 after discharge. Period: PROVIDERS: pharmacist. INTERVENTION QUALITY: call-back duration was 7.4 minutes (range 0-30). FIDELITY/INTEGRITY: intervention was given in 80% by pharmacist as intended; in 20% by student.
Outcomes	NUMBER OF OUTCOMES: 5 OUTCOME / TOOL / TOOL VALIDATED / METHOD OF ASSESSMENT / TIME OF ASSESSMENT A.Psycho-social health of patients (uncertainty, anxiety, informational needs, mood, coping, quality of life, social activity, ..): social well-being / Fact-G scale (Cella 1993) / yes / questionnaire / 3 weeks after discharge; emotional well-being / Fact-G scale (Cella 1993) / yes / questionnaire / 3 weeks after discharge. B.Physical health of patients (eg. functional status, self-care, self-efficacy, independence, ..): functional well-being / Fact-G scale (Cella 1993) / yes / questionnaire / 3 weeks after discharge. Physical well-being / Fact-G scale (Cella 1993) / yes / questionnaire / 3 weeks after discharge. C.Other consumer oriented outcomes (eg. treatment adherence, knowledge, adverse events, ..): symptom distress / Memorial Symptom Assessment Scale (Portenoy 1994) / yes / questionnaire / 3 weeks after discharge. D. Health service delivery oriented outcomes (eg. hospital readmission, health services utilization, ..):
Notes	·CHANGES IN TRIAL PROTOCOL ·CONTACT WITH AUTHOR ·POWER CALCULATION? yes. ·RECORD IF THE STUDY WAS TRANSLATED FROM A LANGUAGE OTHER THAN ENGLISH. ·RECORD IF THE STUDY WAS A DUPLICATE PUBLICATION.

Risk of bias

Bias	Authors' judgement	Support for judgement
Allocation concealment?	Low risk	A - Adequate

Bostrom 1996

Methods	DETAILS OF STUDY AIM OF INTERVENTION: The telephone nursing care link project was designed to provide discharged patients with a means for continuing the health education that was begun by nursing staff during their hospitalisation. AIM OF STUDY: To assess differences in patient satisfaction with the meeting of their healthcare education needs among the patients who received a telephone call after discharge, those who are given the opportunity to call and those who receive no additional telephone follow-up and to assess differences in readmissions within 30 days of discharge between the three groups. STUDY DESIGN: CCT. METHODS OF RECRUITMENT OF PARTICIPANTS: Patients from 5 units were eligible during a 3 month period; using a counterbalanced method patients were allocated to one of three groups. INCLUSION CRITERIA FOR PARTICIPATION IN STUDY: being discharged home from one of five participating units (general surgery, neurosurgery, orthopedic, general medicine, urology)/ English speaking. EXCLUSION CRITERIA FOR PARTICIPATION IN STUDY: not specified. INFORMED CONSENT OBTAINED? unclear. ETHICAL APPROVAL? unclear. FUNDING: unclear. ASSESSMENT OF STUDY QUALITY ALLOCATION CONCEALMENT: unclear. EPOC- QUALITY CRITERIA 2002: C.high risk of bias. METHOD OF GENERATING RANDOMISATION SCHEDULE: alternating scheme by time period and nursing unit. METHOD OF CONCEALMENT OF ALLOCATION: not specified. BLINDING: ·PARTICIPANTS: no. ·PROVIDER/S: no. ·OUTCOME ASSESSOR/S: no. INTENTION TO TREAT ANALYSIS: not stated. BASELINE COMPARABILITY OF INTERVENTION AND CONTROL GROUPS: no. STATISTICAL METHODS AND THEIR APPROPRIATENESS: anova/chi-square. CONSUMER INVOLVEMENT: not stated.
Participants	DESCRIPTION: mixed specialties. GEOGRAPHIC LOCATION: USA. SETTING: discharged home from an acute care setting. NUMBER OF PARTICIPANTS: ELIGIBLE: 1413, RANDOMISED TO INTERVENTION: 445, RANDOMISED TO CONTROL: 183 - 474, INCLUDED IN ANALYSIS INTERVENTION GROUP: 165, INCLUDED IN ANALYSIS CONTROL GROUP: 183 - 474,

Bostrom 1996 *(Continued)*

	AGE: RANGE OR MEAN (SD): GENDER (% MALE): ETHNICITY: PRINCIPAL HEALTH PROBLEM OR DIAGNOSIS: unclear. OTHER HEALTH PROBLEM/S: unclear. TREATMENT RECEIVED/RECEIVING: unclear. OTHER SOCIAL/DEMOGRAPHIC DETAILS: not given.
Interventions	DETAILS OF INTERVENTION: The nurse contacted the patient 2 to 3 days after discharge. Additional calls were made as needed. DETAILS OF CONTROL: Two control groups: one received usual care and the other were given a brochure at discharge that described the project and contained information on how to contact the nurse specialist, the hours of operation and a description of the types of questions that were appropriate for this service. CO-INTERVENTION? no. DETAILS OF CO-INTERVENTIONS: usual care. DELIVERY OF INTERVENTION Frequency: mostly 2 to 3 calls. First time at day 1 after discharge. Period: PROVIDERS: nurse. INTERVENTION QUALITY: unclear how much additional phone calls were made. FIDELITY/INTEGRITY: unclear.
Outcomes	NUMBER OF OUTCOMES: 2. OUTCOME / TOOL / TOOL VALIDATED / METHOD OF ASSESSMENT / TIME OF ASSESSMENT A.Psycho-social health of patients (uncertainty, anxiety, informational needs, mood, coping, quality of life, social activity, ..): satisfaction / self-developed / partly, adaptation of the Patient Learning Need Scale (Bubela, 1990) / questionnaire / 4 weeks after discharge. B.Physical health of patients (eg. functional status, self-care, self-efficacy, independence, ..): C.Other consumer oriented outcomes (eg. treatment adherence, knowledge, adverse events, ..): D. Health service delivery oriented outcomes (eg. hospital readmission, health services utilization, ..): readmission / hospital record / unclear / status analysis / 4 weeks after discharge.
Notes	·CHANGES IN TRIAL PROTOCOL ·CONTACT WITH AUTHOR ·POWER CALCULATION? ·RECORD IF THE STUDY WAS TRANSLATED FROM A LANGUAGE OTHER THAN ENGLISH. ·RECORD IF THE STUDY WAS A DUPLICATE PUBLICATION.

Risk of bias

Bias	Authors' judgement	Support for judgement

Bostrom 1996 *(Continued)*

Allocation concealment?	Unclear risk	B - Unclear

Boter 2000

Methods	DETAILS OF STUDY AIM OF INTERVENTION: to decrease postdischarge problems. AIM OF STUDY: To investigate the effect of a nurse-initiated telephone reassurance program on postdischarge problems reported by recently discharged ophthalmic patients. STUDY DESIGN: RCT. METHODS OF RECRUITMENT OF PARTICIPANTS: patients were informed about the research project during their hospital stay and informed consent was obtained. Immediately after discharge patients were randomized by an independent researcher and using opaque envelopes (not published information). INCLUSION CRITERIA FOR PARTICIPATION IN STUDY: adult ophthalmic patients/ at least 2 days in hospital/ dutch speaking. EXCLUSION CRITERIA FOR PARTICIPATION IN STUDY: admitted from another ward or care institute to the pthalic unit/ discharged to institutional care setting/not able to answer the telephone/not having a telephone. INFORMED CONSENT OBTAINED? yes. ETHICAL APPROVAL? yes. FUNDING: unclear. ASSESSMENT OF STUDY QUALITY ALLOCATION CONCEALMENT: adequate. EPOC- QUALITY CRITERIA 2002: C. high risk of bias. METHOD OF GENERATING RANDOMISATION SCHEDULE: not specified in article; additional information from authors obtained says opaque envelopes were used for randomization by an independent researcher. METHOD OF CONCEALMENT OF ALLOCATION: randomization after discharge by independent researcher. BLINDING: ·PARTICIPANTS: no. ·PROVIDER/S: no. ·OUTCOME ASSESSOR/S: no. INTENTION TO TREAT ANALYSIS: not stated. BASELINE COMPARABILITY OF INTERVENTION AND CONTROL GROUPS: yes. STATISTICAL METHODS AND THEIR APPROPRIATENESS: t-test/u-test. CONSUMER INVOLVEMENT: not stated.
Participants	DESCRIPTION : ophthalmology patients / surgery patients. GEOGRAPHIC LOCATION: The Netherlands. SETTING: discharged home from an acute care setting.

Boter 2000 *(Continued)*

	NUMBER OF PARTICIPANTS: ELIGIBLE: 425. RANDOMISED TO INTERVENTION: 196. RANDOMISED TO CONTROL: 154. INCLUDED IN ANALYSIS INTERVENTION GROUP: 143. INCLUDED IN ANALYSIS CONTROL GROUP: 154. AGE: RANGE OR MEAN (SD): 66.6 (16.1). GENDER (% MALE): 43. ETHNICITY: unclear. PRINCIPAL HEALTH PROBLEM OR DIAGNOSIS: ophthalmic disease (cataract 43%, glaucoma 15%, retina disorder 14%, cornea disorder 13%). OTHER HEALTH PROBLEM/S: 93% self-supporting in ADL/IADL. TREATMENT RECEIVED/RECEIVING: ophthalmic surgery. OTHER SOCIAL/DEMOGRAPHIC DETAILS: 38% living alone.
Interventions	DETAILS OF INTERVENTION: Patients were phoned 3-6 days after discharge by an experienced nurse. Before calling the nurse went through a structured form containing relevant information about the patient's admission and discharge conditions. During the call, the nurse used a structured interview schedule, covering 10 aspects. all aspects were discussed with the patient. Six nurses participated in the project. DETAILS OF CONTROL: usual care. CO-INTERVENTION? no. DETAILS OF CO-INTERVENTIONS: usual care. DELIVERY OF INTERVENTION Frequency: 1. First time at day 3-6 after discharge. Period: PROVIDERS: nurse. INTERVENTION QUALITY: good. FIDELITY/INTEGRITY: unclear.
Outcomes	NUMBER OF OUTCOMES: 4. OUTCOME / TOOL / TOOL VALIDATED / METHOD OF ASSESSMENT / TIME OF ASSESSMENT A.Psycho-social health of patients (uncertainty, anxiety, informational needs, mood, coping, quality of life, social activity, ..): Informational needs / self-developed / partly, adaptation of the Patient Learning Need Scale (Bubela, 1990) / questionnaire / 1 and 4 weeks after discharge. Uncertainty / Mishel Uncertainty in Illness Scale (1989) / yes / questionnaire / 1 and 4 weeks after discharge. Emotional functioning / Problems after Discharge Questionnaire (Mistiaen, 1997) / yes / questionnaire / 1 and 4 weeks after discharge. B.Physical health of patients (eg. functional status, self-care, self-efficacy, independence, ..): Functional limitations / Problems after Discharge Questionnaire (Mistiaen, 1997) / yes / questionnaire / 1 and 4 weeks after discharge. C.Other consumer oriented outcomes (eg. treatment adherence, knowledge, adverse events, ..): D. Health service delivery oriented outcomes (eg. hospital readmission, health services utilization, ..):
Notes	·CHANGES IN TRIAL PROTOCOL

Boter 2000 *(Continued)*

·CONTACT WITH AUTHOR

·POWER CALCULATION? yes.

·RECORD IF THE STUDY WAS TRANSLATED FROM A LANGUAGE OTHER THAN ENGLISH.

·RECORD IF THE STUDY WAS A DUPLICATE PUBLICATION.

Risk of bias

Bias	Authors' judgement	Support for judgement
Allocation concealment?	Low risk	A - Adequate

Chande 1994

Methods

DETAILS OF STUDY

AIM OF INTERVENTION: to improve parental compliance with primary care follow-up.

AIM OF STUDY: It was hypothesized that physician initiated follow-up phone calls to parents of moderately ill children seen in the pediatric emergency department would improve parental compliance with primary care follow-up.

STUDY DESIGN: CCT.

METHODS OF RECRUITMENT OF PARTICIPANTS: unclear.

INCLUSION CRITERIA FOR PARTICIPATION IN STUDY: patients between 6 months and 8 years of age treated as outpatients in the pediatric emergency department for pneumonia or croup or asthma or bronchiolitis or vomiting or fever eci or fever > 39.5 or seizure with fever/ having telephone,

EXCLUSION CRITERIA FOR PARTICIPATION IN STUDY: not specified,

INFORMED CONSENT OBTAINED? unclear.

ETHICAL APPROVAL? yes.

FUNDING: unclear.

ASSESSMENT OF STUDY QUALITY
ALLOCATION CONCEALMENT: unclear.

EPOC- QUALITY CRITERIA 2002: C.high risk of bias.

METHOD OF GENERATING RANDOMISATION SCHEDULE: not specified.

METHOD OF CONCEALMENT OF ALLOCATION: not specified.

BLINDING:
·PARTICIPANTS: no.
·PROVIDER/S: no.
·OUTCOME ASSESSOR/S: yes.

INTENTION TO TREAT ANALYSIS: not stated.

BASELINE COMPARABILITY OF INTERVENTION AND CONTROL GROUPS: not stated.

STATISTICAL METHODS AND THEIR APPROPRIATENESS: chi-square.

CONSUMER INVOLVEMENT: not stated.

Chande 1994 *(Continued)*

Participants	DESCRIPTION : ED patients / pediatric patients. GEOGRAPHIC LOCATION: USA. SETTING: discharged home from an acute care setting. NUMBER OF PARTICIPANTS: ELIGIBLE: 305. RANDOMISED TO INTERVENTION: 133. RANDOMISED TO CONTROL: 132 - - . INCLUDED IN ANALYSIS INTERVENTION GROUP: 133. INCLUDED IN ANALYSIS CONTROL GROUP: 132 - - . AGE: RANGE OR MEAN (SD): 3.2 (2.3). GENDER (% MALE): 63. ETHNICITY: 83% afro-american. PRINCIPAL HEALTH PROBLEM OR DIAGNOSIS:pneumonia or croup or asthma or bronchiolitis or vomiting or fever eci or fever > 39.5 or seizure with fever OTHER HEALTH PROBLEM/S: unclear. TREATMENT RECEIVED/RECEIVING: unclear. OTHER SOCIAL/DEMOGRAPHIC DETAILS: 70.5% on medical assistance insurance; 2.3% had no primary care physician.
Interventions	DETAILS OF INTERVENTION: families in the intervention group were called by a physician within 12-30 hours after discharge. At that time they were reminded to fill their prescriptions, to call their regular doctors, and to follow-up any other specific instructions that had been documented on the discharge sheet. Parents were also given the opportunity to ask questions about other issues related to their child's health. DETAILS OF CONTROL: usual care. CO-INTERVENTION? no. DETAILS OF CO-INTERVENTIONS: usual care. DELIVERY OF INTERVENTION Frequency: 1. First time at day 1-2 after discharge. Period: PROVIDERS: physician. INTERVENTION QUALITY: unclear. FIDELITY/INTEGRITY: unclear.
Outcomes	NUMBER OF OUTCOMES: 1 OUTCOME / TOOL / TOOL VALIDATED / METHOD OF ASSESSMENT / TIME OF ASSESSMENT A.Psycho-social health of patients (uncertainty, anxiety, informational needs, mood, coping, quality of life, social activity, ..): B.Physical health of patients (eg. functional status, self-care, self-efficacy, independence, ..): C.Other consumer oriented outcomes (eg. treatment adherence, knowledge, adverse events, ..): compliance / self-developed / no / telephone interview / 10-20 days after discharge. D. Health service delivery oriented outcomes (eg. hospital readmission, health services utilization, ..):

Chande 1994 *(Continued)*

Notes	·CHANGES IN TRIAL PROTOCOL ·CONTACT WITH AUTHOR ·POWER CALCULATION? ·RECORD IF THE STUDY WAS TRANSLATED FROM A LANGUAGE OTHER THAN ENGLISH. ·RECORD IF THE STUDY WAS A DUPLICATE PUBLICATION.

Risk of bias

Bias	Authors' judgement	Support for judgement
Allocation concealment?	Unclear risk	B - Unclear

Dudas 2001

Methods	DETAILS OF STUDY AIM OF INTERVENTION: A mechanism that may improve patient satisfaction and clinical outcomes at the time of discharge is the use of follow-up telephone calls. AIM OF STUDY: whether pharmacist involved in discharge planning can improve patient satisfaction and outcomes by providing telephone follow-up after hospital discharge. STUDY DESIGN: CCT. METHODS OF RECRUITMENT OF PARTICIPANTS: all patients admitted within a 1 year period, who received a pharmacy-facilitated discharge (= provision of patient counseling on all discharge medications, assistance in obtaining medications and completing insurance forms) and are discharged home. INCLUSION CRITERIA FOR PARTICIPATION IN STUDY: Patients from a general medical service discharged home with a pharmacy-facilitated discharge EXCLUSION CRITERIA FOR PARTICIPATION IN STUDY: discharged to nursing home or other care facility/ homeless/ non-English speaker/unable to participate in a telephone conversation or complete a written survey INFORMED CONSENT OBTAINED? yes ETHICAL APPROVAL? yes FUNDING: yes ASSESSMENT OF STUDY QUALITY ALLOCATION CONCEALMENT: unclear. EPOC- QUALITY CRITERIA 2002: C.high risk of bias. METHOD OF GENERATING RANDOMISATION SCHEDULE: not specified. METHOD OF CONCEALMENT OF ALLOCATION: not specified. BLINDING: ·PARTICIPANTS: no. ·PROVIDER/S: no. ·OUTCOME ASSESSOR/S: no. INTENTION TO TREAT ANALYSIS: yes.

Dudas 2001 *(Continued)*

	BASELINE COMPARABILITY OF INTERVENTION AND CONTROL GROUPS: not stated. STATISTICAL METHODS AND THEIR APPROPRIATENESS: chi-square/t-test. CONSUMER INVOLVEMENT: not stated.
Participants	DESCRIPTION: general medical patients. GEOGRAPHIC LOCATION: USA. SETTING: discharged home from an acute care setting. NUMBER OF PARTICIPANTS: ELIGIBLE: 756. RANDOMISED TO INTERVENTION: 110. RANDOMISED TO CONTROL: 74 . INCLUDED IN ANALYSIS INTERVENTION GROUP: 71. INCLUDED IN ANALYSIS CONTROL GROUP: 74. AGE: RANGE OR MEAN (SD): 55 (19) GENDER (% MALE) 47 ETHNICITY PRINCIPAL HEALTH PROBLEM OR DIAGNOSIS: pneumonia/COPD/asthma/gastroenteritis and many others OTHER HEALTH PROBLEM/S: unclear TREATMENT RECEIVED/RECEIVING: unclear OTHER SOCIAL/DEMOGRAPHIC DETAILS: not given
Interventions	DETAILS OF INTERVENTION: within 2 days after discharge patients received a telephone call from a member of the pharmacy service. The content of the call followed a script to ensure consistency. During the call patients were asked how they had been feeling since returning home, if they had any questions regarding follow-up appointments or the in-hospital care, if they were able to obtain their medication, if they had experienced any medication related side-effects, and if they had any other question or concern. DETAILS OF CONTROL: usual care. CO-INTERVENTION? no. DETAILS OF CO-INTERVENTIONS: usual care. DELIVERY OF INTERVENTION Frequency: 1. First time at day 2 after discharge. Period: PROVIDERS: pharmacist. INTERVENTION QUALITY: good. FIDELITY/INTEGRITY: yes.
Outcomes	NUMBER OF OUTCOMES: 3

Dudas 2001 *(Continued)*

	OUTCOME / TOOL / TOOL VALIDATED / METHOD OF ASSESSMENT / TIME OF ASSESSMENT A.Psycho-social health of patients (uncertainty, anxiety, informational needs, mood, coping, quality of life, social activity, ..): satisfaction / self-developed / no / questionnaire / 2 and 6 weeks after discharge. B.Physical health of patients (eg. functional status, self-care, self-efficacy, independence, ..): C.Other consumer oriented outcomes (eg. treatment adherence, knowledge, adverse events, ..): D. Health service delivery oriented outcomes (eg. hospital readmission, health services utilization, ..): Readmission / hospital record / unclear / status analysis / 4 weeks after discharge. ED-visits / hospital record / unclear / status analysis / 4 weeks after discharge.
Notes	·CHANGES IN TRIAL PROTOCOL ·CONTACT WITH AUTHOR ·POWER CALCULATION? ·RECORD IF THE STUDY WAS TRANSLATED FROM A LANGUAGE OTHER THAN ENGLISH. ·RECORD IF THE STUDY WAS A DUPLICATE PUBLICATION. Yes (see reference Dudas 2001).

Risk of bias

Bias	Authors' judgement	Support for judgement
Allocation concealment?	Unclear risk	B - Unclear

Emerson 2000

Methods	DETAILS OF STUDY AIM OF INTERVENTION: provider initiated follow-up calls to a patient may provide the opportunity to decrease the frequency of unnecessary return office visits; this could save money and time for both provider and patient. AIM OF STUDY: to determine the effects of follow-up telephone calls on the number of return office visits of vasectomy patients. STUDY DESIGN: CCT. METHODS OF RECRUITMENT OF PARTICIPANTS: in the first 3 months all patients were considered intervention patients and received TFU; the next 3 months all patients were considered control patients and received only written postoperative instructions and no TFU. INCLUSION CRITERIA FOR PARTICIPATION IN STUDY: vasectomy patients from an urology group. EXCLUSION CRITERIA FOR PARTICIPATION IN STUDY: not specified. INFORMED CONSENT OBTAINED? no, ETHICAL APPROVAL? yes. FUNDING: unclear. ASSESSMENT OF STUDY QUALITY ALLOCATION CONCEALMENT: inadequate. EPOC- QUALITY CRITERIA 2002: C.high risk of bias. METHOD OF GENERATING RANDOMISATION SCHEDULE: not specified.

Emerson 2000 *(Continued)*

	METHOD OF CONCEALMENT OF ALLOCATION: not specified. BLINDING: ·PARTICIPANTS: no. ·PROVIDER/S: no. ·OUTCOME ASSESSOR/S: no. INTENTION TO TREAT ANALYSIS: not stated. BASELINE COMPARABILITY OF INTERVENTION AND CONTROL GROUPS: not stated. STATISTICAL METHODS AND THEIR APPROPRIATENESS: none. CONSUMER INVOLVEMENT: not stated.
Participants	DESCRIPTION: surgery patients. GEOGRAPHIC LOCATION: USA. SETTING: discharged home from an acute care setting. NUMBER OF PARTICIPANTS: ELIGIBLE: 27. RANDOMISED TO INTERVENTION: 11. RANDOMISED TO CONTROL: 16. INCLUDED IN ANALYSIS INTERVENTION GROUP: 11. INCLUDED IN ANALYSIS CONTROL GROUP: 16 AGE: RANGE OR MEAN (SD): GENDER (% MALE) 100 ETHNICITY PRINCIPAL HEALTH PROBLEM OR DIAGNOSIS: unclear OTHER HEALTH PROBLEM/S: unclear TREATMENT RECEIVED/RECEIVING: vasectomy OTHER SOCIAL/DEMOGRAPHIC DETAILS: not given
Interventions	DETAILS OF INTERVENTION: A telephone call that is specific to the needs/concerns of a vasectomy patient made within 24 to 48 hours of the procedure by a nurse regarding pain, swelling, redness and fever. DETAILS OF CONTROL: usual care. CO-INTERVENTION? no. DETAILS OF CO-INTERVENTIONS: usual care. DELIVERY OF INTERVENTION Frequency: 1. First time at day 1-2 after discharge. Period: PROVIDERS: nurse. INTERVENTION QUALITY: unclear.

Emerson 2000 *(Continued)*

	FIDELITY/INTEGRITY: unclear.
Outcomes	NUMBER OF OUTCOMES: 1 OUTCOME / TOOL / TOOL VALIDATED / METHOD OF ASSESSMENT / TIME OF ASSESSMENT A.Psycho-social health of patients (uncertainty, anxiety, informational needs, mood, coping, quality of life, social activity, ..): B.Physical health of patients (eg. functional status, self-care, self-efficacy, independence, ..): C.Other consumer oriented outcomes (eg. treatment adherence, knowledge, adverse events, ..): D. Health service delivery oriented outcomes (eg. hospital readmission, health services utilization, ..): Unnecessary return office visits / hospital record / unclear / status analysis / 4 weeks after discharge.
Notes	·CHANGES IN TRIAL PROTOCOL ·CONTACT WITH AUTHOR ·POWER CALCULATION? ·RECORD IF THE STUDY WAS TRANSLATED FROM A LANGUAGE OTHER THAN ENGLISH. ·RECORD IF THE STUDY WAS A DUPLICATE PUBLICATION.

Risk of bias

Bias	Authors' judgement	Support for judgement
Allocation concealment?	High risk	C - Inadequate

Fallis 2001

Methods	DETAILS OF STUDY AIM OF INTERVENTION: To assess the patient's level of recuperation, evaluate the care received and identify inadequacies of the process; furthermore it demonstrates a sense of caring about patients and assists in marketing an ambulatory surgery program. AIM OF STUDY: To investigate the post-discharge follow-up required for patients who have undergone laparoscopic cholecystectomy on an outpatient basis and to determine if there was a significant difference in mean concern scores and satisfaction level of patients followed up by a home visit versus a telephone call. STUDY DESIGN: CCT. METHODS OF RECRUITMENT OF PARTICIPANTS: a convenience sample of patients scheduled for elective or urgent laparoscopic cholecystectomy. INCLUSION CRITERIA FOR PARTICIPATION IN STUDY: not requiring postoperative admission; willing to be discharged on the day of operation, have a responsible caregiver and have a telephone. EXCLUSION CRITERIA FOR PARTICIPATION IN STUDY: open cholecystectomy. INFORMED CONSENT OBTAINED? yes. ETHICAL APPROVAL? yes. FUNDING: yes. ASSESSMENT OF STUDY QUALITY

Fallis 2001 *(Continued)*

	ALLOCATION CONCEALMENT: adequate. EPOC- QUALITY CRITERIA 2002: C.high risk of bias. METHOD OF GENERATING RANDOMISATION SCHEDULE: predetermined schedule; patients allocated by an operating room slating clerk. METHOD OF CONCEALMENT OF ALLOCATION: patients allocated by an operating room slating clerk. BLINDING: ·PARTICIPANTS: no. ·PROVIDER/S: no. ·OUTCOME ASSESSOR/S: no. INTENTION TO TREAT ANALYSIS: not stated. BASELINE COMPARABILITY OF INTERVENTION AND CONTROL GROUPS: yes. STATISTICAL METHODS AND THEIR APPROPRIATENESS: chi-square/t-test. CONSUMER INVOLVEMENT: not stated.
Participants	DESCRIPTION: surgery patients. GEOGRAPHIC LOCATION: Canada. SETTING: discharged home from an acute care setting. NUMBER OF PARTTICIPANTS: ELIGIBLE: 152. RANDOMISED TO INTERVENTION: 78. RANDOMISED TO CONTROL: 72. INCLUDED IN ANALYSIS INTERVENTION GROUP: 77. INCLUDED IN ANALYSIS CONTROL GROUP: 72. AGE: RANGE OR MEAN (SD): 42 (13). GENDER (% MALE): 20. ETHNICITY: unclear. PRINCIPAL HEALTH PROBLEM OR DIAGNOSIS: unclear. OTHER HEALTH PROBLEM/S: unclear. TREATMENT RECEIVED/RECEIVING: cholecystectomy. OTHER SOCIAL/DEMOGRAPHIC DETAILS: 25% smoker.
Interventions	DETAILS OF INTERVENTION: not specified. DETAILS OF CONTROL: home visit by a nurse. CO-INTERVENTION? no. DETAILS OF CO-INTERVENTIONS: usual care. DELIVERY OF INTERVENTION Frequency: 1. First time at day 0 after discharge. Period: PROVIDERS: nurse. INTERVENTION QUALITY: unclear.

Fallis 2001 *(Continued)*

	FIDELITY/INTEGRITY: unclear.
Outcomes	NUMBER OF OUTCOMES: 4 OUTCOME / TOOL / TOOL VALIDATED / METHOD OF ASSESSMENT / TIME OF ASSESSMENT A.Psycho-social health of patients (uncertainty, anxiety, informational needs, mood, coping, quality of life, social activity, ..): Satisfaction / self-developed / no / telephone interview / 2 days after discharge patient concerns / self-developed / no / telephone interview / 2 days after discharge. B.Physical health of patients (eg. functional status, self-care, self-efficacy, independence, ..): C.Other consumer oriented outcomes (eg. treatment adherence, knowledge, adverse events, ..): D. Health service delivery oriented outcomes (eg. hospital readmission, health services utilization, ..): Readmission / hospital record / unclear / status analysis / 4 weeks after discharge. ED-visits / hospital record / unclear / status analysis / 4 weeks after discharge.
Notes	·CHANGES IN TRIAL PROTOCOL ·CONTACT WITH AUTHOR ·POWER CALCULATION? ·RECORD IF THE STUDY WAS TRANSLATED FROM A LANGUAGE OTHER THAN ENGLISH. ·RECORD IF THE STUDY WAS A DUPLICATE PUBLICATION.

Risk of bias

Bias	Authors' judgement	Support for judgement
Allocation concealment?	Low risk	A - Adequate

Faulkner 2000

Methods	DETAILS OF STUDY AIM OF INTERVENTION: To enhance compliance and improve outcomes. AIM OF STUDY: To evaluate the impact of personalized telephone follow-up on compliance rates in high-risk hypercholesteraemic patients receiving combination drug therapy. STUDY DESIGN: RCT. METHODS OF RECRUITMENT OF PARTICIPANTS: During a 7 month period patients who had undergone CABG surgery or percutaneous transluminal coronary angioplasty were eligible; patients were recruited from the coronary care unit. INCLUSION CRITERIA FOR PARTICIPATION IN STUDY: CABG or PTCA patients/ baseline fasting LDL above 130 mg/dl/ able to read, understand and speak English/ have telephone at home EXCLUSION CRITERIA FOR PARTICIPATION IN STUDY: serum transaminase level twice above normal/concomitant therapy with cyclosporine, warfarin or erythromycin/history of gastrointestinal disease. INFORMED CONSENT OBTAINED? yes. ETHICAL APPROVAL? unclear. FUNDING: unclear.

Faulkner 2000 *(Continued)*

	ASSESSMENT OF STUDY QUALITY ALLOCATION CONCEALMENT: unclear. EPOC- QUALITY CRITERIA 2002: C. high risk of bias. METHOD OF GENERATING RANDOMISATION SCHEDULE: a computer generated list of random numbers. METHOD OF CONCEALMENT OF ALLOCATION: unclear. BLINDING: ·PARTICIPANTS: no. ·PROVIDER/S: no. ·OUTCOME ASSESSOR/S: no. INTENTION TO TREAT ANALYSIS: not stated. BASELINE COMPARABILITY OF INTERVENTION AND CONTROL GROUPS: yes. STATISTICAL METHODS AND THEIR APPROPRIATENESS: chi-square/t-test. CONSUMER INVOLVEMENT: not stated.
Participants	DESCRIPTION : surgery patients / cardiac patients. GEOGRAPHIC LOCATION: USA. SETTING: discharged home from an acute care setting. NUMBER OF PARTICIPANTS: ELIGIBLE: 30. RANDOMISED TO INTERVENTION: 15. RANDOMISED TO CONTROL: 15. INCLUDED IN ANALYSIS INTERVENTION GROUP: 15. INCLUDED IN ANALYSIS CONTROL GROUP: 15. AGE: RANGE OR MEAN (SD): 62.5 (12). GENDER (% MALE): 57. ETHNICITY: 70% Caucasian. PRINCIPAL HEALTH PROBLEM OR DIAGNOSIS: cardiovascular disease. OTHER HEALTH PROBLEM/S: hypercholesterolaemia. TREATMENT RECEIVED/RECEIVING: CABG (20x)/PTCA(10). OTHER SOCIAL/DEMOGRAPHIC DETAILS:
Interventions	DETAILS OF INTERVENTION: A pharmacist telephoned patients at their home every week for 12 weeks. To ensure consistency, the same pharmacist was involved in each patient contact and a standard set of questions was asked. Emphasis was placed on the importance of therapy in reducing the risk of re-current cardiac events. Patients were questioned about when and where prescriptions were filled, how they paid their prescriptions, potential side-effects, overall well-being, and specific reasons for non-compliance when applicable. DETAILS OF CONTROL: usual care. CO-INTERVENTION? yes. DETAILS OF CO-INTERVENTIONS: in hospital all patients were extensively counseled on the appropriate use of the drugs and all patients received dietary instructions. DELIVERY OF INTERVENTION

Faulkner 2000 *(Continued)*

	Frequency: 12. First time at day 7 after discharge. Period: 12 weeks. PROVIDERS: pharmacist. INTERVENTION QUALITY: unclear. FIDELITY/INTEGRITY: unclear.
Outcomes	NUMBER OF OUTCOMES: 2 OUTCOME / TOOL / TOOL VALIDATED / METHOD OF ASSESSMENT / TIME OF ASSESSMENT A.Psycho-social health of patients (uncertainty, anxiety, informational needs, mood, coping, quality of life, social activity, ..): B.Physical health of patients (eg. functional status, self-care, self-efficacy, independence, ..): C.Other consumer oriented outcomes (e.g. treatment adherence, knowledge, adverse events, ..): Compliance / pill count / no / pill count at the clinic visit / 6 and 12 weeks after discharge and at 1 and 2 years. Lipid-profiles / blood sample / unclear / blood analysis / 6 and 12 weeks after discharge. D. Health service delivery oriented outcomes (e.g. hospital readmission, health services utilization, ..):
Notes	·CHANGES IN TRIAL PROTOCOL NB: for the review only outcomes at 6 and 12 weeks were analyzed ·CONTACT WITH AUTHOR ·POWER CALCULATION? yes. ·RECORD IF THE STUDY WAS TRANSLATED FROM A LANGUAGE OTHER THAN English. ·RECORD IF THE STUDY WAS A DUPLICATE PUBLICATION.

Risk of bias

Bias	Authors' judgement	Support for judgement
Allocation concealment?	Unclear risk	B - Unclear

Garding 1988

Methods	DETAILS OF STUDY AIM OF INTERVENTION: to increase patient knowledge in six content areas. AIM OF STUDY: to investigate the effect of a planned telephone follow-up program to provide information and support to post myocardial infarction patients at home in the 6 to 8 week period after hospital discharge. STUDY DESIGN: CCT. METHODS OF RECRUITMENT OF PARTICIPANTS: all patients entering the coronary care unit with a diagnosis of MI were eligible; further procedure unclear. INCLUSION CRITERIA FOR PARTICIPATION IN STUDY: Myocardial infarction/ able to communicate in english/ have a telephone. EXCLUSION CRITERIA FOR PARTICIPATION IN STUDY: disoriented to time place or person/ history of previous MI/ psychiatric history/ too ill/ not able to return at the clinic at 2 months afterwards.

Garding 1988 *(Continued)*

	INFORMED CONSENT OBTAINED? unclear. ETHICAL APPROVAL? unclear. FUNDING: unclear. ASSESSMENT OF STUDY QUALITY ALLOCATION CONCEALMENT: unclear. EPOC- QUALITY CRITERIA 2002: B.moderate risk of bias. METHOD OF GENERATING RANDOMISATION SCHEDULE: not specified. METHOD OF CONCEALMENT OF ALLOCATION: not specified. BLINDING: ·PARTICIPANTS: no. ·PROVIDER/S: no. ·OUTCOME ASSESSOR/S: yes. INTENTION TO TREAT ANALYSIS: not stated. BASELINE COMPARABILITY OF INTERVENTION AND CONTROL GROUPS: yes. STATISTICAL METHODS AND THEIR APPROPRIATENESS: t-test. CONSUMER INVOLVEMENT: not stated.
Participants	DESCRIPTION: cardiac patients. GEOGRAPHIC LOCATION: Canada. SETTING: discharged home from an acute care setting. NUMBER OF PARTTICIPANTS: ELIGIBLE: 59. RANDOMISED TO INTERVENTION: 29. RANDOMISED TO CONTROL: 30. INCLUDED IN ANALYSIS INTERVENTION GROUP: 25. INCLUDED IN ANALYSIS CONTROL GROUP: 26. AGE: RANGE OR MEAN (SD): 54. GENDER (% MALE): 86. ETHNICITY: not clear. PRINCIPAL HEALTH PROBLEM OR DIAGNOSIS: myocardial infarction. OTHER HEALTH PROBLEM/S: unclear. TREATMENT RECEIVED/RECEIVING: unclear. OTHER SOCIAL/DEMOGRAPHIC DETAILS:
Interventions	DETAILS OF INTERVENTION: the cardiac rehabilitation research nurse made the follow-up phone calls; they assessed understanding of teaching done before discharge. Information that was unclear or confusing was clarified and new information introduced. To promote retention of information, topic areas addressed during each call included each of the six teaching areas of the study. Time was dependent on the patient's difficulty or ease in remembering or understanding the information provided. Approximately 3 calls were made to each subject; additional follow-up was based on the nurse assessment of the subject's knowledge. DETAILS OF CONTROL: usual care.

Garding 1988 *(Continued)*

	CO-INTERVENTION? yes. DETAILS OF CO-INTERVENTIONS: inhospital teaching. DELIVERY OF INTERVENTION Frequency: 3. First time at day unclear after discharge. Period: 6-8 weeks. PROVIDERS: nurse. INTERVENTION QUALITY: unclear. FIDELITY/INTEGRITY: unclear.
Outcomes	NUMBER OF OUTCOMES: 1 OUTCOME / TOOL / TOOL VALIDATED / METHOD OF ASSESSMENT / TIME OF ASSESSMENT A.Psycho-social health of patients (uncertainty, anxiety, informational needs, mood, coping, quality of life, social activity, ..): B.Physical health of patients (eg. functional status, self-care, self-efficacy, independence, ..): C.Other consumer oriented outcomes (eg. treatment adherence, knowledge, adverse events, ..): Knowledge / self-developed / partly, based on instrument of Horn and Swain (1977) and interrater reliability testing / telephone interview / unclear, probably at 8 weeks post discharge. D. Health service delivery oriented outcomes (e.g. hospital readmission, health services utilization, ..):
Notes	·CHANGES IN TRIAL PROTOCOL ·CONTACT WITH AUTHOR ·POWER CALCULATION? ·RECORD IF THE STUDY WAS TRANSLATED FROM A LANGUAGE OTHER THAN ENGLISH. ·RECORD IF THE STUDY WAS A DUPLICATE PUBLICATION.

Risk of bias

Bias	Authors' judgement	Support for judgement
Allocation concealment?	Unclear risk	B - Unclear

Gombeski 1993

Methods	DETAILS OF STUDY AIM OF INTERVENTION: to resolve past and current problems, to provide more personalized care, to increase patient satisfaction and thereby increasing the likelihood they will return and recommend the institution to family and friends and so establishing a competitive advantage over local health providers who do not have such a program. AIM OF STUDY: it was hypothesized that calling discharged patients 3 weeks after leaving the hospital would provide an opportunity to correct any problems, offer additional service, and reinforce the hospital's concern for the patient's medical recovery. STUDY DESIGN: CCT.

Gombeski 1993 *(Continued)*

	METHODS OF RECRUITMENT OF PARTICIPANTS: all patients discharged from a surgical unit were identified through the hospital's database shortly after they left the hospital. INCLUSION CRITERIA FOR PARTICIPATION IN STUDY: discharged from surgery department (general surgery or otorhinolaryngology)/ had at least one overnight stay in the hospital/not being readmitted before scheduled telephone follow-up. EXCLUSION CRITERIA FOR PARTICIPATION IN STUDY: international patients/ being discharged to a nursing home. INFORMED CONSENT OBTAINED? no. ETHICAL APPROVAL? unclear. FUNDING: unclear. ASSESSMENT OF STUDY QUALITY ALLOCATION CONCEALMENT: unclear. EPOC- QUALITY CRITERIA 2002: C.high risk of bias. METHOD OF GENERATING RANDOMISATION SCHEDULE: not specified. METHOD OF CONCEALMENT OF ALLOCATION: not specified. BLINDING: ·PARTICIPANTS: no ·PROVIDER/S: no ·OUTCOME ASSESSOR/S: no INTENTION TO TREAT ANALYSIS: not stated BASELINE COMPARABILITY OF INTERVENTION AND CONTROL GROUPS: not stated. STATISTICAL METHODS AND THEIR APPROPRIATENESS: t-test (probably). CONSUMER INVOLVEMENT: not stated.
Participants	DESCRIPTION: surgery patients. GEOGRAPHIC LOCATION: USA. SETTING: discharged home from an acute care setting. NUMBER OF PARTICIPANTS: ELIGIBLE: 153? RANDOMISED TO INTERVENTION: 78. RANDOMISED TO CONTROL: 75. INCLUDED IN ANALYSIS INTERVENTION GROUP: 78. INCLUDED IN ANALYSIS CONTROL GROUP: 75. AGE: RANGE OR MEAN (SD): ? GENDER (% MALE): ? ETHNICITY: unclear. PRINCIPAL HEALTH PROBLEM OR DIAGNOSIS: unclear. OTHER HEALTH PROBLEM/S: unclear. TREATMENT RECEIVED/RECEIVING: surgery. OTHER SOCIAL/DEMOGRAPHIC DETAILS:

Gombeski 1993 *(Continued)*

Interventions	DETAILS OF INTERVENTION: Three weeks after discharge, the patient was called using an interview guide; the 3 week period was selected because it gives the surgical patient sufficient time to overcome most of the normal problems associated with any surgery; yet if problems persisted, they could be identified and addressed before the routine 6 weeks follow-up. DETAILS OF CONTROL: usual care. CO-INTERVENTION? unclear. DETAILS OF CO-INTERVENTIONS: unclear. DELIVERY OF INTERVENTION: Frequency: 1. First time at day 3 weeks after discharge. Period: PROVIDERS: someone who was not a nurse, but had worked in a number of hospital units and was familiar with hospital patient's concerns. INTERVENTION QUALITY: unclear. FIDELITY/INTEGRITY: unclear.
Outcomes	NUMBER OF OUTCOMES: 1. OUTCOME / TOOL / TOOL VALIDATED / METHOD OF ASSESSMENT / TIME OF ASSESSMENT A.Psycho-social health of patients (uncertainty, anxiety, informational needs, mood, coping, quality of life, social activity, ..): Satisfaction / self-developed / no / written questionnaire / 6 weeks after discharge. B.Physical health of patients (eg. functional status, self-care, self-efficacy, independence, ..): C.Other consumer oriented outcomes (eg. treatment adherence, knowledge, adverse events, ..): D. Health service delivery oriented outcomes (eg. hospital readmission, health services utilization, ..):
Notes	·CHANGES IN TRIAL PROTOCOL ·CONTACT WITH AUTHOR ·POWER CALCULATION? ·RECORD IF THE STUDY WAS TRANSLATED FROM A LANGUAGE OTHER THAN ENGLISH. ·RECORD IF THE STUDY WAS A DUPLICATE PUBLICATION.

Risk of bias

Bias	Authors' judgement	Support for judgement
Allocation concealment?	Unclear risk	B - Unclear

Gortner 1990

Methods	DETAILS OF STUDY AIM OF INTERVENTION: The TFU was aimed to monitor recovery, to reinforce risk-factor reduction, coach toward activity and to provide reassurance. AIM OF STUDY: whether in-patient education and telephone monitoring during convalescence enhanced perceptions of cardiac efficacy and reported activity.

Gortner 1990 *(Continued)*

STUDY DESIGN: RCT.

METHODS OF RECRUITMENT OF PARTICIPANTS: patient and their family members were approached the day before surgery and invited to participate in the study. Randomization occurred following transfer from the ICU and was carried out according to cluster randomized design.

INCLUSION CRITERIA FOR PARTICIPATION IN STUDY
first-time and repeat cardiac surgery patients between 30 and 75 years of age undergoing CABG or valve replacement

EXCLUSION CRITERIA FOR PARTICIPATION IN STUDY: not specified.

INFORMED CONSENT OBTAINED? yes.

ETHICAL APPROVAL? unclear.

FUNDING: unclear.

ASSESSMENT OF STUDY QUALITY

ALLOCATION CONCEALMENT: adequate.

EPOC- QUALITY CRITERIA 2002: C.high risk of bias.

METHOD OF GENERATING RANDOMISATION SCHEDULE: "Randomization occured following transfer from the intensive care unit and was carried out according to a cluster randomization design (Donner et al. 1981). In this procedure, a a group or cluster of subjects is formed and then is assigned as a group, using computer-generated random numbers, to experimental or control conditions. Cluster size was randomly determined, and usually was eight to ten patients...Random assignments were made in accordance with plans drawn by W. Hauck, the consulting statistician; the sequence of randomization was not revealed to research assistants." (p. 1134).

METHOD OF CONCEALMENT OF ALLOCATION: as above.

BLINDING:
·PARTICIPANTS: no
·PROVIDER/S: no
·OUTCOME ASSESSOR/S: no

INTENTION TO TREAT ANALYSIS: not stated

BASELINE COMPARABILITY OF INTERVENTION AND CONTROL GROUPS:
yes

STATISTICAL METHODS AND THEIR APPROPRIATENESS:
t-test/ancova/multiple regression

CONSUMER INVOLVEMENT:
not stated

Participants	DESCRIPTION : cardiac patients / surgery patients. GEOGRAPHIC LOCATION: USA. SETTING: discharged home from an acute care setting. NUMBER OF PARTICIPANTS: ELIGIBLE: 156. RANDOMISED TO INTERVENTION: 75. RANDOMISED TO CONTROL: 77. INCLUDED IN ANALYSIS INTERVENTION GROUP: 71. INCLUDED IN ANALYSIS CONTROL GROUP: 77. AGE: RANGE OR MEAN (SD): 58.

Gortner 1990 *(Continued)*

	GENDER (% MALE): 80. ETHNICITY: 42% caucasian, PRINCIPAL HEALTH PROBLEM OR DIAGNOSIS: cardiovascular disease, OTHER HEALTH PROBLEM/S: unclear. TREATMENT RECEIVED/RECEIVING: CABG and/or valve replacement. OTHER SOCIAL/DEMOGRAPHIC DETAILS:
Interventions	DETAILS OF INTERVENTION: Both groups were provided with routine information on recovery. The experimental group additionally received a slide programme and brief counseling session before discharge. After discharge the experimental group was followed by weekly telephones from a NURSE for 4 weeks and biweekly telephone between 4th and 8th week after discharge. DETAILS OF CONTROL: usual care, CO-INTERVENTION? yes. DETAILS OF CO-INTERVENTIONS: routine information on recovery, consisting of a booklet and slide program. DELIVERY OF INTERVENTION Frequency: 6. First time at day 1 week after discharge. Period: 8 weeks. PROVIDERS: nurse. INTERVENTION QUALITY: poor since outcome assessment coincides with intervention. FIDELITY/INTEGRITY: unclear.
Outcomes	NUMBER OF OUTCOMES: 3 OUTCOME / TOOL / TOOL VALIDATED / METHOD OF ASSESSMENT / TIME OF ASSESSMENT A.Psycho-social health of patients (uncertainty, anxiety, informational needs, mood, coping, quality of life, social activity, ..): Mood state / Profile of Mood States (McNair 1971) / yes / telephone interview / 4, 12 and 24 weeks after discharge. B.Physical health of patients (eg. functional status, self-care, self-efficacy, independence, ..): Activity level / self-developed / no / patient's self-report during telephone interview / 4, 8, 12 and 24 weeks. Self-efficacy / Jenkins Self-Efficacy Scale (Jenkins 1988) / yes / telephone interview / at discharge, 4, 8, 12 and 24 weeks after discharge. C.Other consumer oriented outcomes (e.g. treatment adherence, knowledge, adverse events, ..): D. Health service delivery oriented outcomes (e.g. hospital readmission, health services utilization, ..):
Notes	·CHANGES IN TRIAL PROTOCOL ·CONTACT WITH AUTHOR: yes. ·POWER CALCULATION? ·RECORD IF THE STUDY WAS TRANSLATED FROM A LANGUAGE OTHER THAN ENGLISH. ·RECORD IF THE STUDY WAS A DUPLICATE PUBLICATION.

Risk of bias

Bias	Authors' judgement	Support for judgement

Gortner 1990 *(Continued)*

Allocation concealment?	Low risk	A - Adequate

Hagopian 1990

Methods	DETAILS OF STUDY AIM OF INTERVENTION: it was expected that patients who received a weekly telephone call would have less anxiety, less severe side effects, use more helpful self-care strategies and cope better than patients who did not receive TFU. AIM OF STUDY: to investigate the effects that a weekly telephone call intervention had on patients' well-being. STUDY DESIGN: CCT. METHODS OF RECRUITMENT OF PARTICIPANTS: potential subjects from the physician's practice and meeting the study criteria were identified by the physician nurse team. INCLUSION CRITERIA FOR PARTICIPATION IN STUDY: undergoing radiation therapy for cure /able to communicate by telephone. EXCLUSION CRITERIA FOR PARTICIPATION IN STUDY: not specified. INFORMED CONSENT OBTAINED? unclear. ETHICAL APPROVAL? unclear. FUNDING: yes. ASSESSMENT OF STUDY QUALITY ALLOCATION CONCEALMENT: unclear. EPOC- QUALITY CRITERIA 2002: C.high risk of bias. METHOD OF GENERATING RANDOMISATION SCHEDULE: not specified. METHOD OF CONCEALMENT OF ALLOCATION: not specified. BLINDING: ·PARTICIPANTS: no. ·PROVIDER/S: no. ·OUTCOME ASSESSOR/S: no. INTENTION TO TREAT ANALYSIS: not stated. BASELINE COMPARABILITY OF INTERVENTION AND CONTROL GROUPS: yes. STATISTICAL METHODS AND THEIR APPROPRIATENESS: t-test/anova. CONSUMER INVOLVEMENT: not stated.
Participants	DESCRIPTION: oncology patients GEOGRAPHIC LOCATION: USA. SETTING: discharged home from an acute care setting. NUMBER OF PARTICIPANTS: ELIGIBLE: 55. RANDOMISED TO INTERVENTION: 27. RANDOMISED TO CONTROL: 28 - - .

Hagopian 1990 *(Continued)*

	INCLUDED IN ANALYSIS INTERVENTION GROUP: 27. INCLUDED IN ANALYSIS CONTROL GROUP: 28 - - . AGE: RANGE OR MEAN (SD): 58. GENDER (% MALE): 40. ETHNICITY: PRINCIPAL HEALTH PROBLEM OR DIAGNOSIS: cancer patients receiving radiotherapy (34% breast cancer; plus 7 other types of cancer). OTHER HEALTH PROBLEM/S: unclear. TREATMENT RECEIVED/RECEIVING: radiotherapy. OTHER SOCIAL/DEMOGRAPHIC DETAILS:
Interventions	DETAILS OF INTERVENTION: Experimental patients received usual care ; in addition they received a weekly telephone call by NURSE to further assess problems and reinforce teaching. The weekly telephone calls continued until the first follow-up visit, which usually occurred 1 month after treatment was completed/ DETAILS OF CONTROL: usual care consisting of weekly on-treatment visits with both the physician and nurse during the course of the treatment, usually lasting 6 weeks. CO-INTERVENTION? yes. DETAILS OF CO-INTERVENTIONS: usual care consisting of weekly on-treatment visits with both the physician and nurse during the course of the treatment, usually lasting 6 weeks. DELIVERY OF INTERVENTION Frequency: 4. First time at day 1 week after discharge. Period: 4 weeks. PROVIDERS: nurse. INTERVENTION QUALITY: coincides with weekly treatment and counseling by nurse and physician. FIDELITY/INTEGRITY: unclear.
Outcomes	NUMBER OF OUTCOMES: 4 OUTCOME / TOOL / TOOL VALIDATED / METHOD OF ASSESSMENT / TIME OF ASSESSMENT A.Psycho-social health of patients (uncertainty, anxiety, informational needs, mood, coping, quality of life, social activity, ..): Anxiety / state-anxiety inventory (Spielberger 1983) / yes / telephone interview / 1, 2, 3, 4 and 6 weeks after discharge. Coping / self-developed / adapted from the chronicity Impact and Coping instrument (Hymovich, 1984) / telephone interview / 1, 2, 3, 4 and 6 weeks after discharge. B.Physical health of patients (eg. functional status, self-care, self-efficacy, independence, ..): Selfcare / self-developed / unclear / telephone interview / 1, 2, 3, 4 and 6 weeks after discharge C.Other consumer oriented outcomes (eg. treatment adherence, knowledge, adverse events, ..): Side-effects / self-developed: side-effects profile / unclear / telephone interview / 1, 2, 3, 4 and 6 weeks after discharge. D. Health service delivery oriented outcomes (eg. hospital readmission, health services utilization, ..):
Notes	·CHANGES IN TRIAL PROTOCOL ·CONTACT WITH AUTHOR ·POWER CALCULATION? yes.

Hagopian 1990 *(Continued)*

·RECORD IF THE STUDY WAS TRANSLATED FROM A LANGUAGE OTHER THAN ENGLISH.

·RECORD IF THE STUDY WAS A DUPLICATE PUBLICATION.

Risk of bias

Bias	Authors' judgement	Support for judgement
Allocation concealment?	Unclear risk	B - Unclear

Hartford 2002

Methods	DETAILS OF STUDY AIM OF INTERVENTION: to reduce anxiety in patients and partners. AIM OF STUDY: to determine the effectiveness of an information and support telephone intervention for reducing anxiety in patients who have undergone CABG surgery and their partners STUDY DESIGN: RCT. METHODS OF RECRUITMENT OF PARTICIPANTS: convenience sample. INCLUSION CRITERIA FOR PARTICIPATION IN STUDY: first elective CABG without valve replacement/had a partner at home involved in their care/older than 18 years/able to understand and speak english/have a telephone/ able to hear telephone conversations. EXCLUSION CRITERIA FOR PARTICIPATION IN STUDY: major comorbidity/ psychiatric diagnosis/ generalized anxiety or panic disorder. INFORMED CONSENT OBTAINED? yes. ETHICAL APPROVAL? yes. FUNDING: unclear. ASSESSMENT OF STUDY QUALITY ALLOCATION CONCEALMENT: adequate. EPOC- QUALITY CRITERIA 2002: B.moderate risk of bias. METHOD OF GENERATING RANDOMISATION SCHEDULE: random number assignment and using opaque envelopes. METHOD OF CONCEALMENT OF ALLOCATION: opaque envelopes. BLINDING: PARTICIPANTS: no. ·PROVIDER/S: no. ·OUTCOME ASSESSOR/S: yes. INTENTION TO TREAT ANALYSIS: not stated. BASELINE COMPARABILITY OF INTERVENTION AND CONTROL GROUPS: yes. STATISTICAL METHODS AND THEIR APPROPRIATENESS: chi-square/anova/repeated measures analysis. CONSUMER INVOLVEMENT: not stated.
Participants	DESCRIPTION: cardiac patients / surgery patients.

Hartford 2002 *(Continued)*

	GEOGRAPHIC LOCATION: Canada. SETTING: discharged home from an acute care setting. NUMBER OF PARTTICIPANTS: ELIGIBLE: 166. RANDOMISED TO INTERVENTION: 81. RANDOMISED TO CONTROL: 68. INCLUDED IN ANALYSIS INTERVENTION GROUP: 63. INCLUDED IN ANALYSIS CONTROL GROUP: 68. AGE: RANGE OR MEAN (SD): 63 (8). GENDER (% MALE): 86. ETHNICITY: unclear. PRINCIPAL HEALTH PROBLEM OR DIAGNOSIS: cardiovascular disease. OTHER HEALTH PROBLEM/S: unclear. TREATMENT RECEIVED/RECEIVING: CABG. OTHER SOCIAL/DEMOGRAPHIC DETAILS: 98% married, 50% high school, 58% retired.
Interventions	DETAILS OF INTERVENTION: The intervention consisted of information and support to assist patients (and partners) in meeting their needs. Standardized protocols for predefined problems and concerns identified in the literature were developed. The intervention began on the day of discharge; this was followed by 6 telephone calls by NURSE on days 1, 2, 4, 7, 14 and 21 after discharge. The nurse was also on call 24 hours a day. DETAILS OF CONTROL: usual care. CO-INTERVENTION? no. DETAILS OF CO-INTERVENTIONS: DELIVERY OF INTERVENTION Frequency: 6, First time at day 1 day after discharge, Period: 7 weeks, PROVIDERS: nurse. INTERVENTION QUALITY: unclear. FIDELITY/INTEGRITY: unclear.
Outcomes	NUMBER OF OUTCOMES: 1. OUTCOME / TOOL / TOOL VALIDATED / METHOD OF ASSESSMENT / TIME OF ASSESSMENT A.Psycho-social health of patients (uncertainty, anxiety, informational needs, mood, coping, quality of life, social activity, ..): Anxiety / Beck Anxiety Inventory (Beck, 1988) / yes / telephone interview / 2 days and 4 weeks and 8 weeks after discharge. B.Physical health of patients (eg. functional status, self-care, self-efficacy, independence, ..): C.Other consumer oriented outcomes (eg. treatment adherence, knowledge, adverse events, ..): D.Health service delivery oriented outcomes (eg. hospital readmission, health services utilization, ..):
Notes	·CHANGES IN TRIAL PROTOCOL ·CONTACT WITH AUTHOR: yes.

Hartford 2002 *(Continued)*

·POWER CALCULATION? yes.

·RECORD IF THE STUDY WAS TRANSLATED FROM A LANGUAGE OTHER THAN ENGLISH.

·RECORD IF THE STUDY WAS A DUPLICATE PUBLICATION.

Risk of bias

Bias	Authors' judgement	Support for judgement
Allocation concealment?	Low risk	A - Adequate

Jerant 2001

Methods

DETAILS OF STUDY

AIM OF INTERVENTION: to reduce readmissions.

AIM OF STUDY: To compare the effectiveness of 3 hospital discharge care models for reduction congestive heart failure related readmission charges: 1/ home telecare delivered via a 2-way video-conference device with an integrated electronic stethoscope; 2/ nurse telephone calls; and 3/ usual outpatient care.

STUDY DESIGN: RCT.

METHODS OF RECRUITMENT OF PARTICIPANTS: During a one year period all patients with a primary admission diagnosis of chronic heart failure were screened on the inclusion criteria. Patients who agreed to participate were randomized before discharge, to one of 3 models, using sealed envelopes.

INCLUSION CRITERIA FOR PARTICIPATION IN STUDY: CHF/ aged 40 and older/ telephone at home/ English speaking/ area university of California/ adequate vision and hearing.

EXCLUSION CRITERIA FOR PARTICIPATION IN STUDY: to much comorbidity (Charlson score >6), Geriatric depression score >7, Mini mental state<20, symbol digit modalities test low.

INFORMED CONSENT OBTAINED? yes.

ETHICAL APPROVAL? yes.

FUNDING: yes.

ASSESSMENT OF STUDY QUALITY

ALLOCATION CONCEALMENT: adequate.

EPOC- QUALITY CRITERIA 2002: B. moderate risk of bias.

METHOD OF GENERATING RANDOMISATION SCHEDULE:random number assignment and using opaque envelopes.

METHOD OF CONCEALMENT OF ALLOCATION: opaque envelopes.

BLINDING:
·PARTICIPANTS: no.
·PROVIDER/S: no.
·OUTCOME ASSESSOR/S: no.

INTENTION TO TREAT ANALYSIS: yes.

BASELINE COMPARABILITY OF INTERVENTION AND CONTROL GROUPS: yes.

STATISTICAL METHODS AND THEIR APPROPRIATENESS: chi-square/anova.

Jerant 2001 *(Continued)*

	CONSUMER INVOLVEMENT: not stated.
Participants	DESCRIPTION: cardiac patients. GEOGRAPHIC LOCATION: USA. SETTING: discharged home from an acute care setting. NUMBER OF PARTICIPANTS: ELIGIBLE: 37. RANDOMISED TO INTERVENTION: 12. RANDOMISED TO CONTROL: 13 - 12. INCLUDED IN ANALYSIS INTERVENTION GROUP: 11. INCLUDED IN ANALYSIS CONTROL GROUP: 13 - 12 AGE: RANGE OR MEAN (SD): 68 (12) GENDER (% MALE) 45 ETHNICITY 48% white PRINCIPAL HEALTH PROBLEM OR DIAGNOSIS: congestive heart failure OTHER HEALTH PROBLEM/S: 70% high functional impairment TREATMENT RECEIVED/RECEIVING: medication OTHER SOCIAL/DEMOGRAPHIC DETAILS:
Interventions	DETAILS OF INTERVENTION: All 3 groups received home visit of a nurse shortly after discharge and at day 60. Patient in telephone group received scheduled phone calls from nurse, whereas patients of the telecare group received scheduled telecare visits. Both groups also had possibility to contact study nurse. Difference between the intervention groups is that the telecare group could also see and not only hear study nurse, and vice versa. During contacts several health status measures were filled out. DETAILS OF CONTROL: The telecare was instructed in the use of the equipment and received home telecare visits/ Patients in the usual care group received 2 home visits. CO-INTERVENTION? yes. DETAILS OF CO-INTERVENTIONS: all patients received an in-person home nurse visit shortly after discharge and second in-person home nurse visit 60 days later. During both visits completed some questionnaires. DELIVERY OF INTERVENTION Frequency: 6. First time at day unclear after discharge. Period: 8 weeks. PROVIDERS: nurse. INTERVENTION QUALITY: good. FIDELITY/INTEGRITY: good.
Outcomes	NUMBER OF OUTCOMES: 3 OUTCOME / TOOL / TOOL VALIDATED / METHOD OF ASSESSMENT / TIME OF ASSESSMENT

Jerant 2001 *(Continued)*

	A.Psycho-social health of patients (uncertainty, anxiety, informational needs, mood, coping, quality of life, social activity, ..): Satisfaction / Client Satisfaction questionnaire (Attkisson, 1982) / yes / interview / 60 days. Mental status / SF-36 (Ware, 1992), Minnesota Living wit Heart Failure Questionnaire (Rector, 1992) / yes / interview / 60 days after discharge. B.Physical health of patients (eg. functional status, self-care, self-efficacy, independence, ..): Physical status / SF-36 (Ware, 1992), Minnesota Living wit Heart Failure Questionnaire (Rector, 1992) / yes / interview / 60 days after discharge. C.Other consumer oriented outcomes (eg. treatment adherence, knowledge, adverse events, ..): D. Health service delivery oriented outcomes (eg. hospital readmission, health services utilization, ..):
Notes	·CHANGES IN TRIAL PROTOCOL: readmissions/ed-visits and charges were also measured but only at 6 months, which is outside the scope of this review. ·CONTACT WITH AUTHOR: yes. ·POWER CALCULATION? yes. ·RECORD IF THE STUDY WAS TRANSLATED FROM A LANGUAGE OTHER THAN ENGLISH. ·RECORD IF THE STUDY WAS A DUPLICATE PUBLICATION. Yes, see Jerant 2003.

Risk of bias

Bias	Authors' judgement	Support for judgement
Allocation concealment?	Low risk	A - Adequate

Jones 1988

Methods	DETAILS OF STUDY AIM OF INTERVENTION: To enhance compliance (based on health belief model)/ AIM OF STUDY: the purpose of the study was to test the effect of clinical and telephone intervention on compliance for ED-patients. STUDY DESIGN: RCT. METHODS OF RECRUITMENT OF PARTICIPANTS: consecutive patients who met the sampling criteria were randomly assigned to one of 4 groups. INCLUSION CRITERIA FOR PARTICIPATION IN STUDY: Patients presenting at the ED with one of following problems (chest pain, hypertension, asthma, otitis media, diabetes, urinary tract infection, headache, urethritis, vaginitis, low back pain, rash)/ signed release of information/ able to respond to HBM intervention/ did not require hospital admission/ had a referral follow-up recommendation/ telephone at home. EXCLUSION CRITERIA FOR PARTICIPATION IN STUDY: not specified. INFORMED CONSENT OBTAINED? yes. ETHICAL APPROVAL? yes. FUNDING: yes. ASSESSMENT OF STUDY QUALITY ALLOCATION CONCEALMENT: unclear.

Jones 1988 *(Continued)*

	EPOC- QUALITY CRITERIA 2002: C.high risk of bias. METHOD OF GENERATING RANDOMISATION SCHEDULE: 2X2X11 factorial design/ blocked randomization within each presenting problem. METHOD OF CONCEALMENT OF ALLOCATION: not specified. BLINDING: ·PARTICIPANTS: no. ·PROVIDER/S: no. ·OUTCOME ASSESSOR/S: no. INTENTION TO TREAT ANALYSIS: not stated. BASELINE COMPARABILITY OF INTERVENTION AND CONTROL GROUPS: not stated. STATISTICAL METHODS AND THEIR APPROPRIATENESS: chi-square/logistic regression. CONSUMER INVOLVEMENT: not stated.
Participants	DESCRIPTION: ED patients. GEOGRAPHIC LOCATION: USA. SETTING: discharged home from an acute care setting. NUMBER OF PARTICIPANTS: ELIGIBLE: 842. RANDOMISED TO INTERVENTION: 166. RANDOMISED TO CONTROL: 264 - 251 - 161. INCLUDED IN ANALYSIS INTERVENTION GROUP: 166. INCLUDED IN ANALYSIS CONTROL GROUP: 264 - 251 - 161. AGE: RANGE OR MEAN (SD): 0 to 60+ GENDER (% MALE): unclear. ETHNICITY: unclear. PRINCIPAL HEALTH PROBLEM OR DIAGNOSIS: mixed (largest groups: chest pain, urinary tract infection and low back pain). OTHER HEALTH PROBLEM/S: unclear. TREATMENT RECEIVED/RECEIVING: unclear. OTHER SOCIAL/DEMOGRAPHIC DETAILS: 61% single.
Interventions	DETAILS OF INTERVENTION: Telephone call, which was a modified and shortened application of the Health Belief Model (HBM) clinical intervention, by a nurse 1 or 2 days after the ED-visit/ DETAILS OF CONTROL: There are 3 control groups: group 1 received usual care, group 2 received a HBM clinical intervention during their ED-visit, and group 3 received a HBM clinical intervention during their ED-visit and a telephone HBM follow-up. CO-INTERVENTION? no. DETAILS OF CO-INTERVENTIONS: DELIVERY OF INTERVENTION Frequency: 1. First time at day 1 after discharge. Period: PROVIDERS: nurse.

Jones 1988 *(Continued)*

	INTERVENTION QUALITY: unclear. FIDELITY/INTEGRITY: unclear.
Outcomes	NUMBER OF OUTCOMES: 1 OUTCOME / TOOL / TOOL VALIDATED / METHOD OF ASSESSMENT / TIME OF ASSESSMENT A.Psycho-social health of patients (uncertainty, anxiety, informational needs, mood, coping, quality of life, social activity, ..): B.Physical health of patients (eg. functional status, self-care, self-efficacy, independence, ..): C.Other consumer oriented outcomes (eg. treatment adherence, knowledge, adverse events, ..): Compliance / self-developed / unclear / telephone interview to health agency where patient had referral / different across patients. D. Health service delivery oriented outcomes (eg. hospital readmission, health services utilization, ..):
Notes	·CHANGES IN TRIAL PROTOCOL ·CONTACT WITH AUTHOR ·POWER CALCULATION? ·RECORD IF THE STUDY WAS TRANSLATED FROM A LANGUAGE OTHER THAN ENGLISH. ·RECORD IF THE STUDY WAS A DUPLICATE PUBLICATION. yes, Jones et al. published 5 manuscripts, in which they present results for several subgroups (eg. hypertension, low back pain, otitis media, urinary tract infection).

Risk of bias

Bias	Authors' judgement	Support for judgement
Allocation concealment?	Unclear risk	B - Unclear

Mohan 1999

Methods	DETAILS OF STUDY AIM OF INTERVENTION: to enhance compliance with the use of the home apnea monitor for infants discharged on an apnea monitor. AIM OF STUDY: this study was designed to test whether weekly telephone contact with a health professional would improve the use of the home apnea monitor. STUDY DESIGN: RCT. METHODS OF RECRUITMENT OF PARTICIPANTS: all infants discharged on apnea monitor during a 1.5 year period, were eligible for this study. INCLUSION CRITERIA FOR PARTICIPATION IN STUDY: preterm infants with abnormal pneumocardiogram, patients with bronchopulmonary disease requiring oxygen support/ siblings of a sudden infant death syndrome victim, others infants with various pulmonary, cardiac or neurologic problems. EXCLUSION CRITERIA FOR PARTICIPATION IN STUDY: not specified. INFORMED CONSENT OBTAINED? yes. ETHICAL APPROVAL? yes.

Mohan 1999 *(Continued)*

	FUNDING: unclear. ASSESSMENT OF STUDY QUALITY ALLOCATION CONCEALMENT: unclear. EPOC- QUALITY CRITERIA 2002: C. high risk of bias. METHOD OF GENERATING RANDOMISATION SCHEDULE: stratified balanced block technique. METHOD OF CONCEALMENT OF ALLOCATION: unclear. BLINDING: ·PARTICIPANTS: no. ·PROVIDER/S: no. ·OUTCOME ASSESSOR/S: yes. INTENTION TO TREAT ANALYSIS: not stated. BASELINE COMPARABILITY OF INTERVENTION AND CONTROL GROUPS: yes. STATISTICAL METHODS AND THEIR APPROPRIATENESS: t-test/Mann-Whitney U-test/chi-square. CONSUMER INVOLVEMENT: not stated.
Participants	DESCRIPTION: pediatric patients. GEOGRAPHIC LOCATION: USA. SETTING: discharged home from an acute care setting. NUMBER OF PARTICIPANTS: ELIGIBLE: 69. RANDOMISED TO INTERVENTION: 30. RANDOMISED TO CONTROL: 32. INCLUDED IN ANALYSIS INTERVENTION GROUP: 30. INCLUDED IN ANALYSIS CONTROL GROUP: 32. AGE: RANGE OR MEAN (SD): 0.5 in infants/ 25 years in mothers. GENDER (% MALE): not stated. ETHNICITY: not stated. PRINCIPAL HEALTH PROBLEM OR DIAGNOSIS: preterm infants with abnormal pneumocardiogram, patients with bronchopulmonary disease requiring oxygen support/ siblings of a sudden infant death syndrome victim, others infants with various pulmonary, cardiac or neurologic problems. OTHER HEALTH PROBLEM/S: unclear. TREATMENT RECEIVED/RECEIVING: OTHER SOCIAL/DEMOGRAPHIC DETAILS: 50% of mothers married.
Interventions	DETAILS OF INTERVENTION: above the care comparable to the control group, patients in the experimental group received an additional phone call consisting of a structured interview every week for a total of 8 weeks. The questionnaire addressed the use of monitors and the well-being of the baby, including any need for an office visit or hospitalisation. DETAILS OF CONTROL: care for all groups: access to a physician in the neonatal intensive care unit at all times, initial instruction as well as support 24 hours per day from the monitor vending company, follow-up visits with a neonatologist or pediatrician within 2 weeks of discharge and about every month for the next 3 months and most infants had 1-3 visits by a home nurse in the first 2 weeks following discharge.

Mohan 1999 *(Continued)*

	CO-INTERVENTION? yes. DETAILS OF CO-INTERVENTIONS: see control intervention. DELIVERY OF INTERVENTION: Frequency: 8. First time at day 7 after discharge. Period: 8 weeks. PROVIDERS: unclear, probably physician. INTERVENTION QUALITY: unclear. FIDELITY/INTEGRITY: unclear.
Outcomes	NUMBER OF OUTCOMES: 2 OUTCOME / TOOL / TOOL VALIDATED / METHOD OF ASSESSMENT / TIME OF ASSESSMENT A.Psycho-social health of patients (uncertainty, anxiety, informational needs, mood, coping, quality of life, social activity, ..): Satisfaction / self-developed / partly, adopted from Gerard and Peterson's cardiac patient learning needs inventory / unclear / unclear, but in first month after discharge. B.Physical health of patients (eg. functional status, self-care, self-efficacy, independence, ..): C.Other consumer oriented outcomes (eg. treatment adherence, knowledge, adverse events, ..): Knowledge / self-developed: heart disease management questionnaire / partly; Kuder-Richardson coefficient 0.36 / unclear / unclear, but in first month after discharge. D. Health service delivery oriented outcomes (eg. hospital readmission, health services utilization, ..):
Notes	·CHANGES IN TRIAL PROTOCOL ·CONTACT WITH AUTHOR ·POWER CALCULATION? yes. ·RECORD IF THE STUDY WAS TRANSLATED FROM A LANGUAGE OTHER THAN ENGLISH. ·RECORD IF THE STUDY WAS A DUPLICATE PUBLICATION.

Risk of bias

Bias	Authors' judgement	Support for judgement
Allocation concealment?	Unclear risk	B - Unclear

Munro 1994

Methods	DETAILS OF STUDY AIM OF INTERVENTION: to enhance support. AIM OF STUDY: the hypothesis tested was that routine contact by telephone might significantly improve the adequacy of support for patients during the potentially stressful period between completing radiotherapy and the first follow-up visit. STUDY DESIGN: CCT. METHODS OF RECRUITMENT OF PARTICIPANTS: consecutive unselected outpatients attending for radiotherapy.

Munro 1994 *(Continued)*

	INCLUSION CRITERIA FOR PARTICIPATION IN STUDY: radiotherapy patients. EXCLUSION CRITERIA FOR PARTICIPATION IN STUDY: did not understand English/ not having a telephone/ HIV-related malignancy/ less than 5 dose of radiotherapy/ inhospital patients. INFORMED CONSENT OBTAINED? unclear. ETHICAL APPROVAL? unclear. FUNDING: unclear. ASSESSMENT OF STUDY QUALITY ALLOCATION CONCEALMENT: unclear. EPOC- QUALITY CRITERIA 2002: C.high risk of bias. METHOD OF GENERATING RANDOMISATION SCHEDULE: unclear. METHOD OF CONCEALMENT OF ALLOCATION: unclear. BLINDING: ·PARTICIPANTS: no. ·PROVIDER/S: no. ·OUTCOME ASSESSOR/S: no. INTENTION TO TREAT ANALYSIS: yes. BASELINE COMPARABILITY OF INTERVENTION AND CONTROL GROUPS: not stated. STATISTICAL METHODS AND THEIR APPROPRIATENESS: chi-square. CONSUMER INVOLVEMENT: not stated.
Participants	DESCRIPTION: oncology patients. GEOGRAPHIC LOCATION: UK. SETTING: discharged home from an acute care setting. NUMBER OF PARTICIPANTS: ELIGIBLE: 100. RANDOMISED TO INTERVENTION: 49. RANDOMISED TO CONTROL: 39. INCLUDED IN ANALYSIS INTERVENTION GROUP: 33. INCLUDED IN ANALYSIS CONTROL GROUP: 39. AGE: RANGE OR MEAN (SD): 30 to 88. GENDER (% MALE): 42. ETHNICITY: not stated. PRINCIPAL HEALTH PROBLEM OR DIAGNOSIS: radiotherapy for cancer (breast 43%, lung, 31%,..). OTHER HEALTH PROBLEM/S: unclear. TREATMENT RECEIVED/RECEIVING: OTHER SOCIAL/DEMOGRAPHIC DETAILS:
Interventions	DETAILS OF INTERVENTION: Telephone contact comprised telephone calls to the patient on day 4, 8, 14 and 18 after completing radiotherapy; the telephone calls were made by a member of staff (radiographer, nurse, or doctor who was known to the patient). The calls were semistructured, the questions to be asked being: 'how are you feeling?', 'are you having any problems?', 'have you any further side-effects

Munro 1994 *(Continued)*

	from treatment?', 'do you need to make an appointment ..?'. patients were asked if they had any additional worries or concerns. wherever possible action was taken. DETAILS OF CONTROL: all patients were seen once a week in the clinic by a doctor during the radiotherapy treatment. Additional advice and support was given, where necessary, by radiographers and nurses. In the usual care group no attempt was made to contact the patients between completing treatment and the first follow-up visit. If patients telephoned the department for advice or support this was provided. CO-INTERVENTION? yes. DETAILS OF CO-INTERVENTIONS: see control intervention. DELIVERY OF INTERVENTION Frequency: 4. First time at day 4 after discharge. Period: 3 weeks. PROVIDERS: mixed (nurse, radiographer, doctor). INTERVENTION QUALITY: unclear. FIDELITY/INTEGRITY: unclear.
Outcomes	NUMBER OF OUTCOMES: 1 OUTCOME / TOOL / TOOL VALIDATED / METHOD OF ASSESSMENT / TIME OF ASSESSMENT A.Psycho-social health of patients (uncertainty, anxiety, informational needs, mood, coping, quality of life, social activity, ..): Satisfaction (adequacy of support) / self-developed / no / questionnaire / 4 weeks after discharge. B.Physical health of patients (eg. functional status, self-care, self-efficacy, independence, ..): C.Other consumer oriented outcomes (eg. treatment adherence, knowledge, adverse events, ..): D. Health service delivery oriented outcomes (eg. hospital readmission, health services utilization, ..):
Notes	·CHANGES IN TRIAL PROTOCOL ·CONTACT WITH AUTHOR ·POWER CALCULATION? yes. ·RECORD IF THE STUDY WAS TRANSLATED FROM A LANGUAGE OTHER THAN ENGLISH. ·RECORD IF THE STUDY WAS A DUPLICATE PUBLICATION.

Risk of bias

Bias	Authors' judgement	Support for judgement
Allocation concealment?	Unclear risk	B - Unclear

Nelson 1991

Methods	DETAILS OF STUDY AIM OF INTERVENTION: improve the appropriateness of the parents use of follow-up care. AIM OF STUDY: To test the hypothesis that the appropriateness of parents' use of early follow-up care after ED visits can be improved by post visit support from a nurse practitioner. We hypothesized that

Nelson 1991 *(Continued)*

telephone support, given by pediatric nurse practitioners to parents within 1 day after their ED-visit for their children's acute illness could improve the appropriateness of the parents use of follow-up care.

STUDY DESIGN: RCT.

METHODS OF RECRUITMENT OF PARTICIPANTS: potential subjects were identified on arrival at the ED. Patients were told that they were conducting a survey to try to learn ways of improving pediatric ED care.

INCLUSION CRITERIA FOR PARTICIPATION IN STUDY: child younger than 8 years accompanied by parent or usual caretaker, free of active chronic illness, presenting with a chief complaint suggesting an acute infectious or allergic condition/ parents speaking English, acces to telephone, primary care source is hospital's primary care center.

EXCLUSION CRITERIA FOR PARTICIPATION IN STUDY: requiring hospital admission.

INFORMED CONSENT OBTAINED? yes.

ETHICAL APPROVAL? yes.

FUNDING: yes.

ASSESSMENT OF STUDY QUALITY

ALLOCATION CONCEALMENT: adequate.

EPOC- QUALITY CRITERIA 2002: B. moderate risk of bias.

METHOD OF GENERATING RANDOMISATION SCHEDULE: use of a random number table and a balanced block-randomization

METHOD OF CONCEALMENT OF ALLOCATION: sealed envelopes given to the parents on leaving the ED.

BLINDING:
·PARTICIPANTS: no.
·PROVIDER/S: no.
·OUTCOME ASSESSOR/S: yes.

INTENTION TO TREAT ANALYSIS: yes.

BASELINE COMPARABILITY OF INTERVENTION AND CONTROL GROUPS: yes.

STATISTICAL METHODS AND THEIR APPROPRIATENESS: chi-square.

CONSUMER INVOLVEMENT: not stated.

Participants	DESCRIPTION: ED patients / pediatric patients. GEOGRAPHIC LOCATION: USA. SETTING: discharged home from an acute care setting. NUMBER OF PARTICIPANTS: ELIGIBLE: 190. RANDOMISED TO INTERVENTION: 95. RANDOMISED TO CONTROL: 95. INCLUDED IN ANALYSIS INTERVENTION GROUP: 91. INCLUDED IN ANALYSIS CONTROL GROUP: 93. AGE: RANGE OR MEAN (SD): 2 GENDER (% MALE) 48

Nelson 1991 *(Continued)*

	ETHNICITY 77% black PRINCIPAL HEALTH PROBLEM OR DIAGNOSIS: ED-visit with complaint of infectious or allergic condition OTHER HEALTH PROBLEM/S: unclear TREATMENT RECEIVED/RECEIVING: antibiotic in 46% OTHER SOCIAL/DEMOGRAPHIC DETAILS: parents 86% single and 74% unemployed
Interventions	DETAILS OF INTERVENTION: The intervention consisted of only a single telephone call; mostly the call required less than 5 minutes. The NP called each parent in 6 to 18 hours after discharge from the ED. She offered further explanation about the child's diagnosis and treatment, reinforced follow-up instructions and offered around the clock access to herself or another NP by telephone if needed; the protocol allowed her to answer questions or offer clinical assistance over the phone if it seemed warranted. DETAILS OF CONTROL: usual care. CO-INTERVENTION? no. DETAILS OF CO-INTERVENTIONS: DELIVERY OF INTERVENTION Frequency: 1. First time at day 1 after discharge. Period: PROVIDERS: nurse. INTERVENTION QUALITY: unclear. FIDELITY/INTEGRITY: unclear.
Outcomes	NUMBER OF OUTCOMES: 1 OUTCOME / TOOL / TOOL VALIDATED / METHOD OF ASSESSMENT / TIME OF ASSESSMENT A.Psycho-social health of patients (uncertainty, anxiety, informational needs, mood, coping, quality of life, social activity, ..): B.Physical health of patients (eg. functional status, self-care, self-efficacy, independence, ..): C.Other consumer oriented outcomes (eg. treatment adherence, knowledge, adverse events, ..): Compliance (appropriate use of follow-up care) / self-developed / yes / hospital record/ telephone interview / 1 week after discharge D. Health service delivery oriented outcomes (eg. hospital readmission, health services utilization, ..):
Notes	·CHANGES IN TRIAL PROTOCOL ·CONTACT WITH AUTHOR ·POWER CALCULATION? ·RECORD IF THE STUDY WAS TRANSLATED FROM A LANGUAGE OTHER THAN ENGLISH. ·RECORD IF THE STUDY WAS A DUPLICATE PUBLICATION.

Risk of bias

Nelson 1991 *(Continued)*

Bias	Authors' judgement	Support for judgement
Allocation concealment?	Low risk	A - Adequate

Ouellet 2003

Methods	DETAILS OF STUDY AIM OF INTERVENTION: to help ease surgical orthopaedic patients' transition from hospital to home and to identify problems associated with this transition. AIM OF STUDY: this was a pilot study designed to explore the effectiveness of a post-discharge telephone call for surgical orthopaedic patients; the focus of the study was to identify and resolve problems associated with the study protocol and the data collection tools. STUDY DESIGN: CCT. METHODS OF RECRUITMENT OF PARTICIPANTS: the sample was drawn from a pool of adult patients admitted to the orthopaedic unit for either elective or emergency orthopaedic surgery during a 3 month period. Prospective participants were identified through the use of posters placed in patients' rooms. Patients who expressed an interest in the study were approached prior to their discharge by a research assistant who explained the purpose of the study. INCLUSION CRITERIA FOR PARTICIPATION IN STUDY: English speaking/ 17 years and older/ discharged to a private residence with phone. EXCLUSION CRITERIA FOR PARTICIPATION IN STUDY: not specified. INFORMED CONSENT OBTAINED? yes. ETHICAL APPROVAL? unclear. FUNDING: unclear. ASSESSMENT OF STUDY QUALITY ALLOCATION CONCEALMENT: unclear. EPOC- QUALITY CRITERIA 2002: C. high risk of bias. METHOD OF GENERATING RANDOMISATION SCHEDULE: unclear. METHOD OF CONCEALMENT OF ALLOCATION: not specified. BLINDING: ·PARTICIPANTS: no. ·PROVIDER/S: no. ·OUTCOME ASSESSOR/S: yes. INTENTION TO TREAT ANALYSIS: not stated. BASELINE COMPARABILITY OF INTERVENTION AND CONTROL GROUPS: yes. STATISTICAL METHODS AND THEIR APPROPRIATENESS: not stated. CONSUMER INVOLVEMENT: not stated.
Participants	DESCRIPTION: surgery patients. GEOGRAPHIC LOCATION: Canada. SETTING: discharged home from an acute care setting.

Ouellet 2003 *(Continued)*

	NUMBER OF PARTTICIPANTS: ELIGIBLE: 60. RANDOMISED TO INTERVENTION: 27. RANDOMISED TO CONTROL: 26. INCLUDED IN ANALYSIS INTERVENTION GROUP: 27. INCLUDED IN ANALYSIS CONTROL GROUP: 26. AGE: RANGE OR MEAN (SD): 56.8 (17.6). GENDER (% MALE): 55. ETHNICITY: not stated. PRINCIPAL HEALTH PROBLEM OR DIAGNOSIS: orthopedic problem. OTHER HEALTH PROBLEM/S: unclear. TREATMENT RECEIVED/RECEIVING: orthopedic surgery (68% elective, 32% emergency). OTHER SOCIAL/DEMOGRAPHIC DETAILS: 69% high school or more.
Interventions	DETAILS OF INTERVENTION: The intervention consisted of a follow-up call made by the unit manager (=nurse), or her designate, 24 to 72 hours post discharge. Information obtained was recorded on a form which consisted of a checklist of specific concerns/problems often encountered by post-op patients and a list of relevant nursing interventions in addition to information about the call. DETAILS OF CONTROL: usual care. CO-INTERVENTION? no. DETAILS OF CO-INTERVENTIONS: DELIVERY OF INTERVENTION: Frequency: 1. First time at day 1-3 after discharge. Period: PROVIDERS: nurse. INTERVENTION QUALITY: length of intervention between 1-25 minutes. FIDELITY/INTEGRITY: unclear.
Outcomes	NUMBER OF OUTCOMES: 3 OUTCOME / TOOL / TOOL VALIDATED / METHOD OF ASSESSMENT / TIME OF ASSESSMENT A.Psycho-social health of patients (uncertainty, anxiety, informational needs, mood, coping, quality of life, social activity, ..): B.Physical health of patients (eg. functional status, self-care, self-efficacy, independence, ..):Symptoms / self-developed / yes / telephone interview / 4 weeks after discharge. Recovery / self-developed / yes / telephone interview / 4 weeks after discharge. C.Other consumer oriented outcomes (eg. treatment adherence, knowledge, adverse events, ..): D. Health service delivery oriented outcomes (eg. hospital readmission, health services utilization, ..): Readmission / self-developed / yes / telephone interview / 4 weeks after discharge. ED-visits.
Notes	·CHANGES IN TRIAL PROTOCOL: no comparison results given. ·CONTACT WITH AUTHOR: yes. ·POWER CALCULATION? ·RECORD IF THE STUDY WAS TRANSLATED FROM A LANGUAGE OTHER THAN ENGLISH.

Ouellet 2003 *(Continued)*

·RECORD IF THE STUDY WAS A DUPLICATE PUBLICATION.

Risk of bias

Bias	Authors' judgement	Support for judgement
Allocation concealment?	Unclear risk	B - Unclear

Phillips 1999

Methods	DETAILS OF STUDY AIM OF INTERVENTION: telehealth interventions offer a potentially promising way to improve care and continue patient education once patients have returned to the community/ AIM OF STUDY: to determine which of 3 approaches to care produces the lowest incidence or pressure ulcers, promotes the most effective care of sores that develop and leads to the fewest hospitalizations in newly injured patients with spinal cord injury after discharge. STUDY DESIGN: CCT. METHODS OF RECRUITMENT OF PARTICIPANTS: During a 6 month period, patients with newly injured spinal cords were recruited. Patients for the video group were first recruited; those qualifying were informed about the study and asked to volunteer; following recruitment of the video group, matched controls (age, race, severity of injury) were recruited for the telephone group and the standard care group. INCLUSION CRITERIA FOR PARTICIPATION IN STUDY: scheduled for discharge to the community/ have telephone at home and for the video group living in Georgia. EXCLUSION CRITERIA FOR PARTICIPATION IN STUDY: not specified. INFORMED CONSENT OBTAINED? yes ETHICAL APPROVAL? unclear. FUNDING: unclear. ASSESSMENT OF STUDY QUALITY ALLOCATION CONCEALMENT: inadequate. EPOC- QUALITY CRITERIA 2002: C.high risk of bias. METHOD OF GENERATING RANDOMISATION SCHEDULE:not done. METHOD OF CONCEALMENT OF ALLOCATION: not specified. BLINDING: ·PARTICIPANTS: no. ·PROVIDER/S: no. ·OUTCOME ASSESSORS: not clear. INTENTION TO TREAT ANALYSIS: not stated. BASELINE COMPARABILITY OF INTERVENTION AND CONTROL GROUPS: yes. STATISTICAL METHODS AND THEIR APPROPRIATENESS: kruskall-wallis test/ chi-square. CONSUMER INVOLVEMENT: not stated.
Participants	DESCRIPTION: neurological patients.

Phillips 1999 *(Continued)*

GEOGRAPHIC LOCATION: USA.

SETTING: discharged home from an acute care setting.

NUMBER OF PARTICIPANTS:
ELIGIBLE: 37.
RANDOMISED TO INTERVENTION: 14.
RANDOMISED TO CONTROL: 12 - 11.
INCLUDED IN ANALYSIS INTERVENTION GROUP: 13.
INCLUDED IN ANALYSIS CONTROL GROUP: 12 - 10.

AGE: RANGE OR MEAN (SD): 33 (12).

GENDER (% MALE): 74.

ETHNICITY: 31% African American.

PRINCIPAL HEALTH PROBLEM OR DIAGNOSIS: new spinal cord injury.

OTHER HEALTH PROBLEM/S: unclear.

TREATMENT RECEIVED/RECEIVING: unclear.

OTHER SOCIAL/DEMOGRAPHIC DETAILS: 46% married; 91% employed; 48% post high school education; slight differences in video group.

Interventions	DETAILS OF INTERVENTION: both the video and the telephone group received weekly interventions for 10-12 weeks. The telephone group participated in telephone only counseling sessions for approximately 10 weeks after discharge. During the telephone sessions patients were guided through skin check-ups and were also assisted in problem solving related to bowel, diet or any matter of concern. DETAILS OF CONTROL: The videogroup received weekly interventions for approximately. 10-12 weeks. In the video group, patients participated in weekly counseling sessions using the video-unit for the first 6-8 weeks following discharge; through the images generated the nurse was able to check visually the condition of the patients skin and to monitor him for ulcers; through visual contact the nurse could also help resolve problems related to wheelchairs, mattresses and mobility about the house. Following the video-sessions, patients then received weekly telephone counseling for approximately. 4-6 weeks. The standard care group was given instruction on using the centers' help line; this line provides information and counseling free of charge to patients who call the center on their own initiative. CO-INTERVENTION? no. DETAILS OF CO-INTERVENTIONS: DELIVERY OF INTERVENTION Frequency: 12. First time at day 7 after discharge. Period: 12 weeks. PROVIDERS: nurse. INTERVENTION QUALITY: unclear. FIDELITY/INTEGRITY: unclear.
Outcomes	NUMBER OF OUTCOMES: 2 OUTCOME / TOOL / TOOL VALIDATED / METHOD OF ASSESSMENT / TIME OF ASSESSMENT A.Psycho-social health of patients (uncertainty, anxiety, informational needs, mood, coping, quality of life, social activity, ..): B.Physical health of patients (eg. functional status, self-care, self-efficacy, independence, ..): Tracking/diagnosing pressure ulcer / self-developed / no / unclear / every 8-12 weeks but only reported for a 1 year period (therefore not included in the analysis for this review).

Phillips 1999 *(Continued)*

	C.Other consumer oriented outcomes (eg. treatment adherence, knowledge, adverse events, ..): D. Health service delivery oriented outcomes (eg. hospital readmission, health services utilization, ..): Readmission / unclear / unclear / unclear / at 1 year (not included therefore in review data-analysis)
Notes	·CHANGES IN TRIAL PROTOCOL ·CONTACT WITH AUTHOR ·POWER CALCULATION? yes. ·RECORD IF THE STUDY WAS TRANSLATED FROM A LANGUAGE OTHER THAN ENGLISH. ·RECORD IF THE STUDY WAS A DUPLICATE PUBLICATION.

Risk of bias

Bias	Authors' judgement	Support for judgement
Allocation concealment?	High risk	C - Inadequate

Phillips 2001

Methods	DETAILS OF STUDY AIM OF INTERVENTION: to reduce the incidence of secondary conditions among people with mobility impairment resulting from spinal cord injury. AIM OF STUDY: the results are presented on health related outcomes of a randomized trial of telehealth interventions to reduce the incidence of secondary conditions among people with mobility impairment resulting from spinal cord injury. STUDY DESIGN: CCT. METHODS OF RECRUITMENT OF PARTICIPANTS: patients with spinal cord injury were recruited during their initial stay. Any patient from 18 to 60 years of age with a newly acquired spinal cord injury was eligible. All participants were research volunteers; once they agreed to participate they were randomly assigned to 1 of 3 groups. INCLUSION CRITERIA FOR PARTICIPATION IN STUDY: new spinal cord injury/age 18-60/ have telephone/ discharged to the community. EXCLUSION CRITERIA FOR PARTICIPATION IN STUDY: concomitant diagnosis of brain injury, known active substance abuse, mobility impairment level mild. INFORMED CONSENT OBTAINED? yes. ETHICAL APPROVAL? yes. FUNDING: unclear. ASSESSMENT OF STUDY QUALITY ALLOCATION CONCEALMENT: unclear. EPOC- QUALITY CRITERIA 2002: C. high risk of bias. METHOD OF GENERATING RANDOMISATION SCHEDULE: unclear. METHOD OF CONCEALMENT OF ALLOCATION: not specified. BLINDING:

Phillips 2001 *(Continued)*

	·PARTICIPANTS: no. ·PROVIDER/S: no. ·OUTCOME ASSESSOR/S: yes. INTENTION TO TREAT ANALYSIS: not stated. BASELINE COMPARABILITY OF INTERVENTION AND CONTROL GROUPS: yes. STATISTICAL METHODS AND THEIR APPROPRIATENESS: kruskall-wallis test. CONSUMER INVOLVEMENT: not stated.
Participants	DESCRIPTION: neurological patients. GEOGRAPHIC LOCATION: USA. SETTING: discharged home from an acute care setting. NUMBER OF PARTICIPANTS: ELIGIBLE: unclear. RANDOMISED TO INTERVENTION: 36. RANDOMISED TO CONTROL: 36 - 39. INCLUDED IN ANALYSIS INTERVENTION GROUP: 36. INCLUDED IN ANALYSIS CONTROL GROUP: 36 - 39. AGE: RANGE OR MEAN (SD): 37 (12). GENDER (% MALE): 77. ETHNICITY: 17% African American. PRINCIPAL HEALTH PROBLEM OR DIAGNOSIS:new spinal cord injury. OTHER HEALTH PROBLEM/S: unclear. TREATMENT RECEIVED/RECEIVING: unclear. OTHER SOCIAL/DEMOGRAPHIC DETAILS: 55% married.
Interventions	DETAILS OF INTERVENTION: 3 groups: telephone, videophone and standard care. Video and phone groups took part in individual educational rehabilitation sessions with a nurse once a week for 5 weeks, then once every 2 weeks for one month. These sessions were in addition to any other regularly scheduled care, such as the two month post discharge care. The content and structure of the education sessions for the phone and video group were similar, except that the video group also saw real time images of the nurse. The intervention sessions lasted a total of nine weeks. DETAILS OF CONTROL: 2 groups: video group and standard care. The standard care group were offered the routine care, which requires patients to call the hospital help line if and when they need assistance prior to the regular 2 months post discharge visit. CO-INTERVENTION? no. DETAILS OF CO-INTERVENTIONS: DELIVERY OF INTERVENTION: Frequency: 7. First time at day 7 after discharge. Period: 9 weeks. PROVIDERS: nurse. INTERVENTION QUALITY: unclear. FIDELITY/INTEGRITY: unclear.

Phillips 2001 *(Continued)*

Outcomes	NUMBER OF OUTCOMES: 4 OUTCOME / TOOL / TOOL VALIDATED / METHOD OF ASSESSMENT / TIME OF ASSESSMENT A.Psycho-social health of patients (uncertainty, anxiety, informational needs, mood, coping, quality of life, social activity, ..): Quality of life / quality of well-being scale (self-developed??) / unclear / interview / 5 and 9 weeks after discharge. Depression / Center for epidemiologic studies depression scale (self-developed?) / unclear / interview / 9 weeks after discharge. B.Physical health of patients (eg. functional status, self-care, self-efficacy, independence, ..): C.Other consumer oriented outcomes (eg. treatment adherence, knowledge, adverse events, ..): D. Health service delivery oriented outcomes (eg. hospital readmission, health services utilization, ..): Readmission / unclear / unclear / unclear / at 1 year (not included therefore in review data-analysis).
Notes	·CHANGES IN TRIAL PROTOCOL ·CONTACT WITH AUTHOR ·POWER CALCULATION? yes. ·RECORD IF THE STUDY WAS TRANSLATED FROM A LANGUAGE OTHER THAN ENGLISH. ·RECORD IF THE STUDY WAS A DUPLICATE PUBLICATION.

Risk of bias

Bias	Authors' judgement	Support for judgement
Allocation concealment?	Unclear risk	B - Unclear

Riegel 2002

Methods	DETAILS OF STUDY AIM OF INTERVENTION: to reduce resource use (readmissions, hospital days, costs). AIM OF STUDY: to assess the effectiveness of a standardized telephonic case-management intervention in decreasing resource use in patients with chronic heart failure. STUDY DESIGN: CCT. METHODS OF RECRUITMENT OF PARTICIPANTS: physicians known to admit patients with heart failure were matched by specialty (cardiology, internal medicine), practice size and number of HF admissions in the prior year. After matching, physicians were randomized to the intervention or usual care group. Although it was the physicians who were randomized, patients were the unit of analysis for this study. It was not feasible to randomize patients in the same physician practice to different groups because of the possibility that the physicians would modify care in the control group to mimic aspects of the intervention. Physicians were not informed of the group to which they were assigned. A total of 281 physicians were randomized. INCLUSION CRITERIA FOR PARTICIPATION IN STUDY: confirmed diagnosis of heart failure as the primary reason for their hospital visit/ speak English or Spanish. EXCLUSION CRITERIA FOR PARTICIPATION IN STUDY: cognitive impairment or psychiatric illness/ severe renal failure requiring dialysis/ terminal disease// discharge to a long term care setting/ previous enrolment in a HF disease program. INFORMED CONSENT OBTAINED? yes. ETHICAL APPROVAL? yes.

Riegel 2002 *(Continued)*

	FUNDING: yes. ASSESSMENT OF STUDY QUALITY ALLOCATION CONCEALMENT: unclear. EPOC- QUALITY CRITERIA 2002: C.high risk of bias. METHOD OF GENERATING RANDOMISATION SCHEDULE: unclear. METHOD OF CONCEALMENT OF ALLOCATION: not specified. BLINDING: ·PARTICIPANTS: no. ·PROVIDER/S: no. ·OUTCOME ASSESSOR/S: no. INTENTION TO TREAT ANALYSIS: not stated. BASELINE COMPARABILITY OF INTERVENTION AND CONTROL GROUPS: no. STATISTICAL METHODS AND THEIR APPROPRIATENESS: anova/logistic regression/linear regression. CONSUMER INVOLVEMENT: not stated.
Participants	DESCRIPTION: cardiac patients. GEOGRAPHIC LOCATION: USA. SETTING:discharged home from an acute care setting. NUMBER OF PARTICIPANTS: ELIGIBLE: 573. RANDOMISED TO INTERVENTION: 130. RANDOMISED TO CONTROL: 112 . INCLUDED IN ANALYSIS INTERVENTION GROUP: 130. INCLUDED IN ANALYSIS CONTROL GROUP: 112. AGE: RANGE OR MEAN (SD): 72 (12). GENDER (% MALE): 49. ETHNICITY: 25% Spanish speaking. PRINCIPAL HEALTH PROBLEM OR DIAGNOSIS: heart failure (49% ischemic, 20% hypertensive). OTHER HEALTH PROBLEM/S: 41% low comorbidity, 20% high comorbidity (68% hypertension, 35% COPD, 42% diabetes, 28% renal disease). TREATMENT RECEIVED/RECEIVING: medication (62% digoxin, 54% ACE-inhibitor, 86% diuretic,…). OTHER SOCIAL/DEMOGRAPHIC DETAILS: 56% single.
Interventions	DETAILS OF INTERVENTION: Telephonic case management by a registered nurse was provided using a decision support software program; the software program uses automated tool for setting priorities for patient education, data collection and documentation; best practices are supported by the program. The intervention group was phoned within 5 days after discharge and thereafter at a frequency guided by the software and case manager judgment based on patient symptoms, knowledge and needs. Patients received an average of 17 calls at decreasing levels of intensity, length and frequency over the 6 month follow-up period; printed educational material was mailed every month to the patients. DETAILS OF CONTROL: usual care, not standardized. CO-INTERVENTION? unclear.

Riegel 2002 *(Continued)*

	DETAILS OF CO-INTERVENTIONS: DELIVERY OF INTERVENTION Frequency: 14. First time at day 5 after discharge. Period: 6 months. PROVIDERS: nurse. INTERVENTION QUALITY: large range. FIDELITY/INTEGRITY: unclear.
Outcomes	NUMBER OF OUTCOMES: 2 OUTCOME / TOOL / TOOL VALIDATED / METHOD OF ASSESSMENT / TIME OF ASSESSMENT A.Psycho-social health of patients (uncertainty, anxiety, informational needs, mood, coping, quality of life, social activity, ..): B.Physical health of patients (eg. functional status, self-care, self-efficacy, independence, ..): C.Other consumer oriented outcomes (eg. treatment adherence, knowledge, adverse events, ..): D. Health service delivery oriented outcomes (eg. hospital readmission, health services utilization, ..): Readmission / self-developed / unclear / hospital record / 3 and 6 months. Costs / self-developed / no / hospital record / 3 and 6 months.
Notes	·CHANGES IN TRIAL PROTOCOL: Riegel 2002 (in journal Disease Management & Health Outcomes) is subanalysis for Spanish speaking patients. ·CONTACT WITH AUTHOR ·POWER CALCULATION? yes. ·RECORD IF THE STUDY WAS TRANSLATED FROM A LANGUAGE OTHER THAN ENGLISH. ·RECORD IF THE STUDY WAS A DUPLICATE PUBLICATION.

Risk of bias

Bias	Authors' judgement	Support for judgement
Allocation concealment?	Unclear risk	B - Unclear

Ritchie 2000

Methods	DETAILS OF STUDY AIM OF INTERVENTION: to improve patient attendance at outpatients clinic after ED visit. AIM OF STUDY: to determine whether the intervention of a telephone call within 3 days of ED attendance would improve the proportion of patients making recommended appointments and the proportion of patients attending scheduled appointments. STUDY DESIGN: RCT. METHODS OF RECRUITMENT OF PARTICIPANTS: consecutive patients who were advised by ED doctors to make outpatient appointments were identified for inclusion using the ED computer system over a 4 week period. INCLUSION CRITERIA FOR PARTICIPATION IN STUDY:

Ritchie 2000 *(Continued)*

EXCLUSION CRITERIA FOR PARTICIPATION IN STUDY: do not speak english/ confused or demented with no carer/ had no telephone/ age under 16 years/haven been included previously in the study/ are referred to a private specialist or another hospital.

INFORMED CONSENT OBTAINED? no.

ETHICAL APPROVAL? yes.

FUNDING: unclear.

ASSESSMENT OF STUDY QUALITY

ALLOCATION CONCEALMENT: inadequate.

EPOC- QUALITY CRITERIA 2002: B. moderate risk of bias.

METHOD OF GENERATING RANDOMISATION SCHEDULE: restricted randomisation in blocks of ten was performed using a table of random numbers from a standard statistical text.

METHOD OF CONCEALMENT OF ALLOCATION: not specified.

BLINDING:
·PARTICIPANTS: no.
·PROVIDER/S: no.
·OUTCOME ASSESSOR/S: no.

INTENTION TO TREAT ANALYSIS: yes.

BASELINE COMPARABILITY OF INTERVENTION AND CONTROL GROUPS: yes.

STATISTICAL METHODS AND THEIR APPROPRIATENESS: chi-square/ logistic regression.

CONSUMER INVOLVEMENT: not stated.

Participants	DESCRIPTION: ED patients. GEOGRAPHIC LOCATION: Australia. SETTING: discharged home from an acute care setting. NUMBER OF PARTICIPANTS: ELIGIBLE: 400. RANDOMISED TO INTERVENTION: 200. RANDOMISED TO CONTROL: 180. INCLUDED IN ANALYSIS INTERVENTION GROUP: 164. INCLUDED IN ANALYSIS CONTROL GROUP: 180. AGE: RANGE OR MEAN (SD): 16-65+ . GENDER (% MALE): 64. ETHNICITY: not stated. PRINCIPAL HEALTH PROBLEM OR DIAGNOSIS: various. OTHER HEALTH PROBLEM/S: TREATMENT RECEIVED/RECEIVING: unclear. OTHER SOCIAL/DEMOGRAPHIC DETAILS:
Interventions	DETAILS OF INTERVENTION: patients in the intervention group were phoned by one of the authors (MD) or a research nurse 1-3 days after ED attendance. A general enquiry was made about their health and the importance of medical follow-up was explained in general terms; if the patient had already made an appointment, they were reminded about that appointment; for those who had not yet scheduled an

Ritchie 2000 *(Continued)*

	appointment, they were reminded that they had been advised to do so, and an offer was made to book one for them at that time. DETAILS OF CONTROL: usual care. CO-INTERVENTION? no. DETAILS OF CO-INTERVENTIONS: DELIVERY OF INTERVENTION Frequency: 1. First time at day 1-3 after discharge. Period: PROVIDERS: doctor/nurse. INTERVENTION QUALITY: unclear, FIDELITY/INTEGRITY: unclear.
Outcomes	NUMBER OF OUTCOMES: 1. OUTCOME / TOOL / TOOL VALIDATED / METHOD OF ASSESSMENT / TIME OF ASSESSMENT A.Psycho-social health of patients (uncertainty, anxiety, informational needs, mood, coping, quality of life, social activity, ..): B.Physical health of patients (eg. functional status, self-care, self-efficacy, independence, ..): C.Other consumer oriented outcomes (eg. treatment adherence, knowledge, adverse events, ..): Compliance / self-developed / no / hospital record / within 3 months. D. Health service delivery oriented outcomes (eg. hospital readmission, health services utilization, ..):
Notes	·CHANGES IN TRIAL PROTOCOL ·CONTACT WITH AUTHOR ·POWER CALCULATION? yes. ·RECORD IF THE STUDY WAS TRANSLATED FROM A LANGUAGE OTHER THAN ENGLISH. ·RECORD IF THE STUDY WAS A DUPLICATE PUBLICATION.

Risk of bias

Bias	Authors' judgement	Support for judgement
Allocation concealment?	High risk	C - Inadequate

Roebuck 1999

Methods	DETAILS OF STUDY AIM OF INTERVENTION: to reduce anxiety and depression. AIM OF STUDY: the study tests the hypothesis that telephone follow-up from the ward will reduce patients' anxiety and depression levels in the early post-discharge period. STUDY DESIGN: CCT. METHODS OF RECRUITMENT OF PARTICIPANTS: patients admitted during a 21-day consecutive period were enrolled to a defined group. After completion of this period, no patients were enrolled for 7 days

Roebuck 1999 *(Continued)*

to prevent patient overlap if their discharge was delayed. The process was then repeated with the patients being enrolled to the alternative group. Patients were asked for consent and enrolled into the study on the day they were given a planned discharge date.

INCLUSION CRITERIA FOR PARTICIPATION IN STUDY: have undergone elective coronary artery bypass grafting or valve replacement.

EXCLUSION CRITERIA FOR PARTICIPATION IN STUDY: unable to give consent/ could not communicate in English/ history of mental illness/ have undergone emergency cardiac surgery.

INFORMED CONSENT OBTAINED? yes.

ETHICAL APPROVAL? yes.

FUNDING: yes.

ASSESSMENT OF STUDY QUALITY

ALLOCATION CONCEALMENT: inadequate.

EPOC- QUALITY CRITERIA 2002: C.high risk of bias.

METHOD OF GENERATING RANDOMISATION SCHEDULE: A convenience sampling model utilizing alternative block selection was used.

METHOD OF CONCEALMENT OF ALLOCATION: not specified.

BLINDING:
·PARTICIPANTS: no.
·PROVIDER/S: no.
·OUTCOME ASSESSOR/S: no.

INTENTION TO TREAT ANALYSIS: not stated.

BASELINE COMPARABILITY OF INTERVENTION AND CONTROL GROUPS: yes.

STATISTICAL METHODS AND THEIR APPROPRIATENESS: Mann-Whitney U test.

CONSUMER INVOLVEMENT: not stated.

Participants	DESCRIPTION: cardiac patients / surgery patients. GEOGRAPHIC LOCATION: UK. SETTING: discharged home from an acute care setting. NUMBER OF PARTICIPANTS: ELIGIBLE: 78. RANDOMISED TO INTERVENTION: 45. RANDOMISED TO CONTROL: 31. INCLUDED IN ANALYSIS INTERVENTION GROUP: 42. INCLUDED IN ANALYSIS CONTROL GROUP: 31. AGE: RANGE OR MEAN (SD): unclear. GENDER (% MALE): unclear. ETHNICITY: unclear. PRINCIPAL HEALTH PROBLEM OR DIAGNOSIS: coronary heart and/or valve disease. OTHER HEALTH PROBLEM/S: not specified. TREATMENT RECEIVED/RECEIVING: CABG-surgery or valve replacement.

Roebuck 1999 *(Continued)*

	OTHER SOCIAL/DEMOGRAPHIC DETAILS: not given.
Interventions	DETAILS OF INTERVENTION: patients in the intervention group received standard discharge advice/information plus 2 additional follow-up calls from a nurse. Contact was made at 7 and 21 days after discharge. On contact, the callers introduced themselves and patient identity was confirmed. Patients were invited to discuss how they had been since their last contact with the ward and encouraged to raise any concerns or difficulties they had experienced since that time. DETAILS OF CONTROL: standard advice included the patient being offered a selection of information leaflets, a personal exercise plan and an individual discussion with their named nurse over concerns and discharge medications. CO-INTERVENTION? no. DETAILS OF CO-INTERVENTIONS: DELIVERY OF INTERVENTION Frequency: 2. First time at day 7 after discharge. Period: 3 weeks. PROVIDERS: nurse. INTERVENTION QUALITY: unclear. FIDELITY/INTEGRITY: unclear.
Outcomes	NUMBER OF OUTCOMES: 2 OUTCOME / TOOL / TOOL VALIDATED / METHOD OF ASSESSMENT / TIME OF ASSESSMENT A.Psycho-social health of patients (uncertainty, anxiety, informational needs, mood, coping, quality of life, social activity, ..): Anxiety / Hospital anxiety and depression scale (Zigmond, 1983) / yes / postal questionnaire / 5 weeks after discharge. Depression / Hospital anxiety and depression scale (Zigmond, 1983) / yes / postal questionnaire / 5 weeks after discharge. B.Physical health of patients (eg. functional status, self-care, self-efficacy, independence, ..): C.Other consumer oriented outcomes (eg. treatment adherence, knowledge, adverse events, ..): D. Health service delivery oriented outcomes (eg. hospital readmission, health services utilization, ..):
Notes	·CHANGES IN TRIAL PROTOCOL ·CONTACT WITH AUTHOR ·POWER CALCULATION? ·RECORD IF THE STUDY WAS TRANSLATED FROM A LANGUAGE OTHER THAN ENGLISH. ·RECORD IF THE STUDY WAS A DUPLICATE PUBLICATION.

Risk of bias

Bias	Authors' judgement	Support for judgement
Allocation concealment?	High risk	C - Inadequate

Samarel 2002

Methods	DETAILS OF STUDY

Samarel 2002 *(Continued)*

AIM OF INTERVENTION: to reduce worry, mood disturbance and enhance well-being and quality of relationship.

AIM OF STUDY: the purpose of this study was to examine the effects of a 13-month, 3 phase intervention, comparing an experimental group receiving combined individual telephone and in-person group social support and education treatment with a control group receiving telephone only individual support and education treatment and a control group receiving one time mailed educational information treatment on cancer-related worry, well-being, mood disturbance, loneliness and the quality of relationship with a significant other among women newly diagnosed with early stage breast cancer.

STUDY DESIGN: CCT.

METHODS OF RECRUITMENT OF PARTICIPANTS: Women were recruited through letters distributed at physician's offices, hospitals and the American Cancer Society Reach to Recover program. Because letters were distributed by personnel at each site, the number of women reached is not known.

INCLUSION CRITERIA FOR PARTICIPATION IN STUDY: English speaking/ had surgery for nonmetastatic breast cancer within 4 weeks prior to beginning their participation in the study, had no previous cancer diagnosis, no other major medical problems.

EXCLUSION CRITERIA FOR PARTICIPATION IN STUDY: not specified.

INFORMED CONSENT OBTAINED? yes.

ETHICAL APPROVAL? unclear.

FUNDING: yes.

ASSESSMENT OF STUDY QUALITY

ALLOCATION CONCEALMENT: adequate.

EPOC- QUALITY CRITERIA 2002: C.high risk of bias.

METHOD OF GENERATING RANDOMISATION SCHEDULE: Using a permuted block design for randomization, when successive cohorts of 4-8 women had been recruited, the entire cohort was randomly assigned to one of the three treatment groups using the sealed opaque envelope technique. When the next cohort was recruited, that cohort was assigned to one of the two remaining study treatment groups, using the two remaining sealed opaque envelopes. The next cohort was assigned to the remaining study treatment group, after which the process started again. Random assignment was repeated in this manner until the full sample was recruited and assigned.

METHOD OF CONCEALMENT OF ALLOCATION: sealed opaque envelopes.

BLINDING:
·PARTICIPANTS: no.
·PROVIDER/S: no.
·OUTCOME ASSESSOR/S: no.

INTENTION TO TREAT ANALYSIS: not stated.

BASELINE COMPARABILITY OF INTERVENTION AND CONTROL GROUPS: no.

STATISTICAL METHODS AND THEIR APPROPRIATENESS: manova/ anova/kruskall-wallis/ mann-whitney U.

CONSUMER INVOLVEMENT: not stated.

Participants	DESCRIPTION: oncology patients / surgery patients. GEOGRAPHIC LOCATION: USA. SETTING: discharged home from an acute care setting. NUMBER OF PARTICIPANTS:

Samarel 2002 *(Continued)*

	ELIGIBLE: 183. RANDOMISED TO INTERVENTION: 68. RANDOMISED TO CONTROL: 34 - 60. INCLUDED IN ANALYSIS INTERVENTION GROUP: 48. INCLUDED IN ANALYSIS CONTROL GROUP: 34 - 60. AGE: RANGE OR MEAN (SD): 54 (10.8). GENDER (% MALE): 0. ETHNICITY: 89% white. PRINCIPAL HEALTH PROBLEM OR DIAGNOSIS: breast cancer. OTHER HEALTH PROBLEM/S: not specified. TREATMENT RECEIVED/RECEIVING: lumpectomy (42%), mastectomy (57), chemotherapy (44%), radiation therapy (26%). OTHER SOCIAL/DEMOGRAPHIC DETAILS: 61% married, 43% high school.
Interventions	DETAILS OF INTERVENTION: 3 groups: telephone only, telephone and in-person group social support,and group 3 one time education by mailing. Women in (for this review experimental group) experienced a less intense form of the focal stimulus by receiving social support and education only by telephone in all 3 phases of the study (see control group 1). the intervention was based on Roy's adaptation model. The individual telephone social support and education were provided by either oncology nurse clinicians or social workers, who were trained by the investigators. Specially developed guides were used during the intervention. Logs of the phone contacts were made, that were periodically reviewed. DETAILS OF CONTROL: This group received the most intense intervention in the form of the focal stimulus of social support and education by receiving combined individual telephone and in-person group social support and education, which was provided in 3 phases over 13 months. The treatment was designed to provide more intense support during the times of peak need. More specifically weekly phone contacts in first 3 months, weekly in-person social support in next two months and twice-monthly phone contacts in next 8 months. Control group 2 received usual care in first 3 months, and one-time mailing in month 4. CO-INTERVENTION? no. DETAILS OF CO-INTERVENTIONS: DELIVERY OF INTERVENTION Frequency: 32. First time at day between week 2 and 4 after discharge. Period: 13 months. PROVIDERS: nurse/social worker. INTERVENTION QUALITY: unclear. FIDELITY/INTEGRITY: good.
Outcomes	NUMBER OF OUTCOMES: 7 OUTCOME / TOOL / TOOL VALIDATED / METHOD OF ASSESSMENT / TIME OF ASSESSMENT A.Psycho-social health of patients (uncertainty, anxiety, informational needs, mood, coping, quality of life, social activity, ..): Satisfaction / patient satisfaction questionnaire (Shortell 2000) / yes / telephone interview / 1 and 5 weeks after discharge. Mental status / SF-36 (Ware, 1992) / yes / telephone interview / 1 and 5 weeks after discharge. Social functioning / SF-36 (Ware, 1992) / yes / telephone interview / 1 and 5 weeks after discharge. B.Physical health of patients (eg. functional status, self-care, self-efficacy, independence, ..): Physical functioning / SF-36 (Ware, 1992) / yes / telephone interview / 1 and 5 weeks after discharge. Symptom

Samarel 2002 *(Continued)*

	distress / Memorial symptom assessment scale (Portenoy 1994) / yes / telephone interview / 1 and 5 weeks after discharge. C.Other consumer oriented outcomes (eg. treatment adherence, knowledge, adverse events, ..): D. Health service delivery oriented outcomes (eg. hospital readmission, health services utilization, ..): Readmission / self-developed / no / telephone interview / 1 and 5 weeks after discharge. ED-visits / self-developed / no / telephone interview / 1 and 5 weeks after discharge.
Notes	·CHANGES IN TRIAL PROTOCOL NOTE: since intervention group and control group 1 receive the same intervention during first 3 months and they only start differing after this point, these groups can be combined for this review into 1 intervention group and compared to control group 2 (usual care). ·CONTACT WITH AUTHOR ·POWER CALCULATION? yes. ·RECORD IF THE STUDY WAS TRANSLATED FROM A LANGUAGE OTHER THAN ENGLISH. ·RECORD IF THE STUDY WAS A DUPLICATE PUBLICATION.

Risk of bias

Bias	Authors' judgement	Support for judgement
Allocation concealment?	Low risk	A - Adequate

Shesser 1986

Methods	DETAILS OF STUDY AIM OF INTERVENTION: to increase patient satisfaction and patient compliance. AIM OF STUDY: to describe and quantify the benefit that can be derived from an organized system of follow-up telephone calls. STUDY DESIGN: CCT. METHODS OF RECRUITMENT OF PARTICIPANTS: During a 10 day period, all patients charts were reviewed and each patient who was discharged home from the ED with one of nine diagnosis was included in the study; included patients then were stratified by disease category and were randomized into two groups. INCLUSION CRITERIA FOR PARTICIPATION IN STUDY: Discharged home/ diagnosis of undiagnosed chest pain, undiagnosed abdominal pain, acute infection, vaginal haemorrhage, syncope, acute cervical/lumbar pain, asthma/bronchospasm, allergic reaction, headache. EXCLUSION CRITERIA FOR PARTICIPATION IN STUDY: not specified. INFORMED CONSENT OBTAINED? no. ETHICAL APPROVAL? unclear. FUNDING: unclear. ASSESSMENT OF STUDY QUALITY ALLOCATION CONCEALMENT: unclear. EPOC- QUALITY CRITERIA 2002: C.high risk of bias.

Shesser 1986 *(Continued)*

	METHOD OF GENERATING RANDOMISATION SCHEDULE: not specified. METHOD OF CONCEALMENT OF ALLOCATION: not specified. BLINDING: · PARTICIPANTS: no. ·PROVIDER/S: no. ·OUTCOME ASSESSOR/S: no. INTENTION TO TREAT ANALYSIS: not stated. BASELINE COMPARABILITY OF INTERVENTION AND CONTROL GROUPS: yes. STATISTICAL METHODS AND THEIR APPROPRIATENESS: chi-square. CONSUMER INVOLVEMENT: not stated.
Participants	DESCRIPTION: ED patients. GEOGRAPHIC LOCATION: USA. SETTING: discharged home from an acute care setting. NUMBER OF PARTICIPANTS: ELIGIBLE: 559. RANDOMISED TO INTERVENTION: 297. RANDOMISED TO CONTROL: 94. INCLUDED IN ANALYSIS INTERVENTION GROUP: 83. INCLUDED IN ANALYSIS CONTROL GROUP: 94. AGE: RANGE OR MEAN (SD): 36 (15). GENDER (% MALE): 47. ETHNICITY: unclear. PRINCIPAL HEALTH PROBLEM OR DIAGNOSIS: acute infection (30%), abdominal pain (20%), acute lumbar pain (14%), chest pain (12%), other. OTHER HEALTH PROBLEM/S: not specified. TREATMENT RECEIVED/RECEIVING: unclear. OTHER SOCIAL/DEMOGRAPHIC DETAILS:
Interventions	DETAILS OF INTERVENTION: Within 48 to 72 hours after the ED-visit, attempts were made to call the patients. Calls were made by members of the ED clinical nursing staff. The caller had a copy of the patient's ED chart, and interviewed the patient by following a written scenario that was designed to determine the progression of the patient's symptoms, whether the patient had already sought additional medical consultation, whether the patient eventually would seek follow-up with the provider recommended by the ED physician and whether the ED instructions for aftercare were clear. DETAILS OF CONTROL: usual care. CO-INTERVENTION? no. DETAILS OF CO-INTERVENTIONS: DELIVERY OF INTERVENTION Frequency: 1. First time at day 2-3 after discharge. Period: PROVIDERS: nurse.

Shesser 1986 *(Continued)*

	INTERVENTION QUALITY: unclear. FIDELITY/INTEGRITY: unclear.
Outcomes	NUMBER OF OUTCOMES: 7 OUTCOME / TOOL / TOOL VALIDATED / METHOD OF ASSESSMENT / TIME OF ASSESSMENT A.Psycho-social health of patients (uncertainty, anxiety, informational needs, mood, coping, quality of life, social activity, ..): Satisfaction / patient satisfaction questionnaire (Shortell 2000) / yes / telephone interview / 1 and 5 weeks after discharge. Mental status / SF-36 (Ware, 1992) / yes / telephone interview / 1 and 5 weeks after discharge. Social functioning / SF-36 (Ware, 1992) / yes / telephone interview / 1 and 5 weeks after discharge. B.Physical health of patients (eg. functional status, self-care, self-efficacy, independence, ..): Physical functioning / SF-36 (Ware, 1992) / yes / telephone interview / 1 and 5 weeks after discharge. Symptom distress / Memorial symptom assessment scale (Portenoy 1994) / yes / telephone interview / 1 and 5 weeks after discharge. C.Other consumer oriented outcomes (eg. treatment adherence, knowledge, adverse events, ..): D. Health service delivery oriented outcomes (eg. hospital readmission, health services utilization, ..): Readmission / self-developed / no / telephone interview / 1 and 5 weeks after discharge. ED-visits / self-developed / no / telephone interview / 1 and 5 weeks after discharge.
Notes	·CHANGES IN TRIAL PROTOCOL ·CONTACT WITH AUTHOR ·POWER CALCULATION? ·RECORD IF THE STUDY WAS TRANSLATED FROM A LANGUAGE OTHER THAN ENGLISH. ·RECORD IF THE STUDY WAS A DUPLICATE PUBLICATION.

Risk of bias

Bias	Authors' judgement	Support for judgement
Allocation concealment?	Unclear risk	B - Unclear

Touyz 1998

Methods	DETAILS OF STUDY AIM OF INTERVENTION: to reduce pain and improve pain management. AIM OF STUDY: to determine whether telephone consultation influenced patients' perception of and reaction to pain after periodontal surgery. STUDY DESIGN: CCT. METHODS OF RECRUITMENT OF PARTICIPANTS: during a 4 year period patients who presented to the division of periodontology of a general hospital and who fulfilled inclusion criteria were admitted to the study. INCLUSION CRITERIA FOR PARTICIPATION IN STUDY: moderate to severe peridontal disease (class 3 and 4), diagnosed as adult cause-related peridontitis, root planning and subsequent periodontal surgical pocket reduction or prescribed elective preprosthetic periodontal surgery, systemic health,age 30 to 70 years, no history of mental disease, no medication for at least 1 month prior to the procedure. EXCLUSION CRITERIA FOR PARTICIPATION IN STUDY: not specified.

Touyz 1998 *(Continued)*

	INFORMED CONSENT OBTAINED? no. ETHICAL APPROVAL? unclear. FUNDING: unclear. ASSESSMENT OF STUDY QUALITY ALLOCATION CONCEALMENT: inadequate. EPOC- QUALITY CRITERIA 2002: C.high risk of bias. METHOD OF GENERATING RANDOMISATION SCHEDULE: not done. METHOD OF CONCEALMENT OF ALLOCATION: not done. BLINDING: ·PARTICIPANTS: no. ·PROVIDER/S: no. ·OUTCOME ASSESSOR/S: no. INTENTION TO TREAT ANALYSIS: not stated. BASELINE COMPARABILITY OF INTERVENTION AND CONTROL GROUPS: not stated. STATISTICAL METHODS AND THEIR APPROPRIATENESS: student t-test. CONSUMER INVOLVEMENT: not stated.
Participants	DESCRIPTION: surgery patients. GEOGRAPHIC LOCATION: Canada. SETTING: discharged home from an acute care setting. NUMBER OF PARTTICIPANTS: ELIGIBLE: 152. RANDOMISED TO INTERVENTION: 59. RANDOMISED TO CONTROL: 59. INCLUDED IN ANALYSIS INTERVENTION GROUP: 59. INCLUDED IN ANALYSIS CONTROL GROUP: 59. AGE: RANGE OR MEAN (SD): 50 (2). GENDER (% MALE): 46. ETHNICITY: unclear. PRINCIPAL HEALTH PROBLEM OR DIAGNOSIS: periodontitis. OTHER HEALTH PROBLEM/S: none. TREATMENT RECEIVED/RECEIVING: periodontal surgery. OTHER SOCIAL/DEMOGRAPHIC DETAILS:
Interventions	DETAILS OF INTERVENTION: the intervention group patients were called no later than 24 hours after the procedure. The telephone interviewer was either the assisting student or the supervisor dentist, who then systematically inquired about 10 points (well-being of patient, the return to normal and loss of analgesia, jaw swelling, wound bleeding, whether the wound was painful, acquisition and use of mouthwash and analgesics, the need for a soft balanced diet, necessity of sustained oral hygiene, confirmation of the next week's appointment and reassurance about the reaction and pain). The interviewer was instructed to be sympathetic, to reassure patients that whatever reaction they were having was within the range of expected normal limits and to be positive about a successful outcome.

Touyz 1998 *(Continued)*

	DETAILS OF CONTROL: usual care. CO-INTERVENTION? no. DETAILS OF CO-INTERVENTIONS: DELIVERY OF INTERVENTION Frequency: 1. First time at day 1 after discharge. Period: PROVIDERS: dentist. INTERVENTION QUALITY: unclear. FIDELITY/INTEGRITY: unclear.
Outcomes	NUMBER OF OUTCOMES: 3 OUTCOME / TOOL / TOOL VALIDATED / METHOD OF ASSESSMENT / TIME OF ASSESSMENT A.Psycho-social health of patients (uncertainty, anxiety, informational needs, mood, coping, quality of life, social activity, ..): B.Physical health of patients (eg. functional status, self-care, self-efficacy, independence, ..): Selfcare deficits / self-developed / no / telephone interview / 6 weeks after discharge. Blood glucose level / Hba1c-level / unclear / blood sample / 3 months after discharge. C.Other consumer oriented outcomes (eg. treatment adherence, knowledge, adverse events, ..): Knowledge / Diabetes knowledge scale (Dunn,1984) / yes / telephone interview / 6 weeks after discharge. D. Health service delivery oriented outcomes (eg. hospital readmission, health services utilization, ..):
Notes	·CHANGES IN TRIAL PROTOCOL ·CONTACT WITH AUTHOR ·POWER CALCULATION? ·RECORD IF THE STUDY WAS TRANSLATED FROM A LANGUAGE OTHER THAN ENGLISH. ·RECORD IF THE STUDY WAS A DUPLICATE PUBLICATION.

Risk of bias

Bias	Authors' judgement	Support for judgement
Allocation concealment?	High risk	C - Inadequate

Tranmer 2004

Methods	DETAILS OF STUDY AIM OF INTERVENTION: to improve cardiac surgery recovery following hospital discharge, as reflected in improved health related quality of life, decreased symptom distress, improved satisfaction with discharge and follow-up care and decreased unplanned contacts with the hospital. AIM OF STUDY: The purpose of the study was to determine if the provision of Advanced Practice Nurse (APN) support, delivered via the telephone, improved cardiac surgery recovery following hospital discharge, as reflected in improved health related quality of life, decreased symptom distress, improved satisfaction with discharge and follow-up care and decreased unplanned contacts with the hospital.

Tranmer 2004 *(Continued)*

STUDY DESIGN: RCT.

METHODS OF RECRUITMENT OF PARTICIPANTS: participants were recruited from the inpatient cardiac surgery unit. Prior to discharge, eligible participants were identified by a research assistant who obtained consent and baseline data. The research assistant informed the APN of consenting patients' discharge. recruited patients were randomized after discharge.

INCLUSION CRITERIA FOR PARTICIPATION IN STUDY: a) undergone first elective or emergent cardiac surgery, b) no unexpected cardiac complications that necessitated an unexpected stay in ICU, c) oriented to time, place and person, d) no history of acute or chronic psychiatric problems, e) able to read, write and speak English, f) capable of responding over the telephone.

EXCLUSION CRITERIA FOR PARTICIPATION IN STUDY

INFORMED CONSENT OBTAINED? yes.

ETHICAL APPROVAL? yes.

FUNDING: yes.

ASSESSMENT OF STUDY QUALITY

ALLOCATION CONCEALMENT: unclear.

EPOC- QUALITY CRITERIA 2002: B.moderate risk of bias.

METHOD OF GENERATING RANDOMISATION SCHEDULE: random numbers were generated by a statistical consultant through a computer based randomization schedule and forwarded to the APN who assigned patients.

METHOD OF CONCEALMENT OF ALLOCATION: unclear.

BLINDING:
·PARTICIPANTS: no.
·PROVIDER/S: no.
·OUTCOME ASSESSOR/S: yes.

INTENTION TO TREAT ANALYSIS: yes.

BASELINE COMPARABILITY OF INTERVENTION AND CONTROL GROUPS: yes.

STATISTICAL METHODS AND THEIR APPROPRIATENESS: t-test/chi-square/Mann-Whitney U test.

CONSUMER INVOLVEMENT: not stated.

Participants	DESCRIPTION: cardiac patients / surgery patients. GEOGRAPHIC LOCATION: Canada. SETTING: discharged home from an acute care setting. NUMBER OF PARTICIPANTS: ELIGIBLE: unclear. RANDOMISED TO INTERVENTION: 102. RANDOMISED TO CONTROL: 92. INCLUDED IN ANALYSIS INTERVENTION GROUP: 94. INCLUDED IN ANALYSIS CONTROL GROUP: 92. AGE: RANGE OR MEAN (SD): 64. GENDER (% MALE): 76. ETHNICITY: unclear. PRINCIPAL HEALTH PROBLEM OR DIAGNOSIS: coronary artery disease.

Tranmer 2004 *(Continued)*

	OTHER HEALTH PROBLEM/S: COPD in 20%; peripheral vascular disease in 10%, cerebrovascular disease in 145, renal failure in 3.5%. TREATMENT RECEIVED/RECEIVING: CABG. OTHER SOCIAL/DEMOGRAPHIC DETAILS: 16% single.
Interventions	DETAILS OF INTERVENTION: The intervention group received, in addition to the usual care, active and ongoing follow-up via nurse-initiated telephone calls from the APN in cardiac surgery at 3 and 5 days following discharge and then weekly for 4 more weeks. During the calls, the APN continued with the plan of care established in the hospital, provided ongoing information and assessment, assisted with self-management of common symptoms and facilitated referrals to appropriate healthcare resources. Telephone sessions were individually tailored in response to patient's symptoms, concerns and recovery. All sessions, however, were standardized sufficiently to include evaluation of physical and psychological states and incorporated mutual goal setting for the management of symptoms in the recovery period. The initial TFU were approximately 20 to 30 minutes. DETAILS OF CONTROL: usual care: this included preoperative and discharge preparation by the APN, provision of an education booklet and home care follow-up if necessary. Patients were provided the contact information for the APN and instruction to call with questions or concerns. CO-INTERVENTION? no. DETAILS OF CO-INTERVENTIONS: DELIVERY OF INTERVENTION Frequency: 6. First time at day 3 after discharge. Period: 5 weeks. PROVIDERS: nurse. INTERVENTION QUALITY: good. FIDELITY/INTEGRITY: good.
Outcomes	NUMBER OF OUTCOMES: 7 OUTCOME / TOOL / TOOL VALIDATED / METHOD OF ASSESSMENT / TIME OF ASSESSMENT A.Psycho-social health of patients (uncertainty, anxiety, informational needs, mood, coping, quality of life, social activity, ..): Satisfaction / patient satisfaction questionnaire (Shortell 2000) / yes / telephone interview / 1 and 5 weeks after discharge. Mental status / SF-36 (Ware, 1992) / yes / telephone interview / 1 and 5 weeks after discharge. Social functioning / SF-36 (Ware, 1992) / yes / telephone interview / 1 and 5 weeks after discharge. B.Physical health of patients (eg. functional status, self-care, self-efficacy, independence, ..): Physical functioning / SF-36 (Ware, 1992) / yes / telephone interview / 1 and 5 weeks after discharge. Symptom distress / Memorial symptom assessment scale (Portenoy 1994) / yes / telephone interview / 1 and 5 weeks after discharge. C.Other consumer oriented outcomes (eg. treatment adherence, knowledge, adverse events, ..): D. Health service delivery oriented outcomes (eg. hospital readmission, health services utilization, ..): Readmission / self-developed / no / telephone interview / 1 and 5 weeks after discharge. ED-visits / self-developed / no / telephone interview / 1 and 5 weeks after discharge.
Notes	·CHANGES IN TRIAL PROTOCOL ·CONTACT WITH AUTHOR ·POWER CALCULATION? yes. ·RECORD IF THE STUDY WAS TRANSLATED FROM A LANGUAGE OTHER THAN ENGLISH.

Tranmer 2004 *(Continued)*

·RECORD IF THE STUDY WAS A DUPLICATE PUBLICATION.

Risk of bias

Bias	Authors' judgement	Support for judgement
Allocation concealment?	Unclear risk	B - Unclear

Tu 1993

Methods	DETAILS OF STUDY AIM OF INTERVENTION: to increase self-care knowledge, improve metabolic control and reduce self-care behavioral deficits. AIM OF STUDY: to determine the effect of telephone follow-up on diabetes self-care knowledge, blood glucose levels, and changes in self-care behaviors of the elderly subjects. STUDY DESIGN: CCT. METHODS OF RECRUITMENT OF PARTICIPANTS: a convenience sample was recruited from inpatients of a diabetic hospital. INCLUSION CRITERIA FOR PARTICIPATION IN STUDY: 60 years and older/ diabetes mellitus 2/ successfully completed an inpatient diabetes education program during their hospitalisation/ intact cognitive functioning/ able to perform self-care activities independently/ are being followed by primary physician in the diabetes clinic. EXCLUSION CRITERIA FOR PARTICIPATION IN STUDY: complex medical conditions (heart failure, end-stage renal disease, advanced cancer, major surgery,..). INFORMED CONSENT OBTAINED? yes. ETHICAL APPROVAL? yes. FUNDING: yes. ASSESSMENT OF STUDY QUALITY ALLOCATION CONCEALMENT: unclear. EPOC- QUALITY CRITERIA 2002: C.high risk of bias. METHOD OF GENERATING RANDOMISATION SCHEDULE: not specified. METHOD OF CONCEALMENT OF ALLOCATION: not specified. BLINDING: ·PARTICIPANTS: no. ·PROVIDER/S: no. ·OUTCOME ASSESSOR/S: no. INTENTION TO TREAT ANALYSIS: not stated. BASELINE COMPARABILITY OF INTERVENTION AND CONTROL GROUPS: not stated. STATISTICAL METHODS AND THEIR APPROPRIATENESS: t-test/chi-square. CONSUMER INVOLVEMENT: not stated.
Participants	DESCRIPTION: diabetes patients.

Tu 1993 *(Continued)*

	GEOGRAPHIC LOCATION: USA. SETTING: discharged home from an acute care setting. NUMBER OF PARTICIPANTS: ELIGIBLE: 36. RANDOMISED TO INTERVENTION: 16. RANDOMISED TO CONTROL: 12. INCLUDED IN ANALYSIS INTERVENTION GROUP: 15. INCLUDED IN ANALYSIS CONTROL GROUP: 12. AGE: RANGE OR MEAN (SD): 65 (6.5). GENDER (% MALE): 33. ETHNICITY: 52% white. PRINCIPAL HEALTH PROBLEM OR DIAGNOSIS: diabetes 2. OTHER HEALTH PROBLEM/S: not specified. TREATMENT RECEIVED/RECEIVING: education program. OTHER SOCIAL/DEMOGRAPHIC DETAILS: 63% had 12 years of education.
Interventions	DETAILS OF INTERVENTION: subjects in the experimental group were contacted by either the primary investigator or a trained research assistant (both nurses) within 24 to 48 hours after discharge from hospital. The telephone calls were repeated at weekly intervals for 3 weeks, thus a total of 4 calls were made. Each call consisted of assessing the diabetic client's self care knowledge and practice of self-care activities or behaviours; supplemental instructions were provided when indicated. DETAILS OF CONTROL: usual care. CO-INTERVENTION? no. DETAILS OF CO-INTERVENTIONS: DELIVERY OF INTERVENTION Frequency: 4. First time at day 1-2 after discharge. Period: 4. PROVIDERS: nurse. INTERVENTION QUALITY: unclear. FIDELITY/INTEGRITY: good.
Outcomes	NUMBER OF OUTCOMES: 3 OUTCOME / TOOL / TOOL VALIDATED / METHOD OF ASSESSMENT / TIME OF ASSESSMENT A.Psycho-social health of patients (uncertainty, anxiety, informational needs, mood, coping, quality of life, social activity, ..): B.Physical health of patients (eg. functional status, self-care, self-efficacy, independence, ..): Selfcare deficits / self-developed / no / telephone interview / 6 weeks after discharge. Blood glucose level / Hba1c-level / unclear / blood sample / 3 months after discharge. C.Other consumer oriented outcomes (eg. treatment adherence, knowledge, adverse events, ..): Knowledge / Diabetes knowledge scale (Dunn,1984) / yes / telephone interview / 6 weeks after discharge. D. Health service delivery oriented outcomes (eg. hospital readmission, health services utilization, ..):
Notes	·CHANGES IN TRIAL PROTOCOL

Tu 1993 *(Continued)*

·CONTACT WITH AUTHOR

·POWER CALCULATION?

·RECORD IF THE STUDY WAS TRANSLATED FROM A LANGUAGE OTHER THAN ENGLISH.

·RECORD IF THE STUDY WAS A DUPLICATE PUBLICATION.

Risk of bias

Bias	Authors' judgement	Support for judgement
Allocation concealment?	Unclear risk	B - Unclear

Weaver 2001

Methods

DETAILS OF STUDY

AIM OF INTERVENTION: to reinforce education, answer questions, and support the patient and family in regard to the post-operative recovery process.

AIM OF STUDY: to evaluate the telephone follow-up program; it was sought to compare 2 groups of cardiac surgery patients: those who received usual care and those who received usual care and telephone follow-up calls for 1 month after discharge, with regard to satisfaction with continuity of care, depression, recidivism, and complications.

STUDY DESIGN: CCT.

METHODS OF RECRUITMENT OF PARTICIPANTS: all eligible cardiac surgery patients were invited to participate. The resulting convenience sample was then randomly divided to control and intervention group.

INCLUSION CRITERIA FOR PARTICIPATION IN STUDY: 21 years and older/ discharged home 3 to 7 days after surgery, able to read, speak and understand English.

EXCLUSION CRITERIA FOR PARTICIPATION IN STUDY: not specified.

INFORMED CONSENT OBTAINED? yes.

ETHICAL APPROVAL? unclear.

FUNDING: yes.

ASSESSMENT OF STUDY QUALITY

ALLOCATION CONCEALMENT: unclear.

EPOC- QUALITY CRITERIA 2002: C.high risk of bias.

METHOD OF GENERATING RANDOMISATION SCHEDULE: not specified.

METHOD OF CONCEALMENT OF ALLOCATION: not specified.

BLINDING:
·PARTICIPANTS: no.
·PROVIDER/S: no.
·OUTCOME ASSESSOR/S: no.

INTENTION TO TREAT ANALYSIS: not stated.

BASELINE COMPARABILITY OF INTERVENTION AND CONTROL GROUPS: not stated.

Weaver 2001 *(Continued)*

	STATISTICAL METHODS AND THEIR APPROPRIATENESS: not stated. CONSUMER INVOLVEMENT: not stated.
Participants	DESCRIPTION: cardiac patients / surgery patients. GEOGRAPHIC LOCATION: USA. SETTING: discharged home from an acute care setting. NUMBER OF PARTICIPANTS: ELIGIBLE: 90. RANDOMISED TO INTERVENTION: 44. RANDOMISED TO CONTROL: 46. INCLUDED IN ANALYSIS INTERVENTION GROUP: 44. INCLUDED IN ANALYSIS CONTROL GROUP: 46. AGE: RANGE OR MEAN (SD): 63. GENDER (% MALE): 70. ETHNICITY: unclear. PRINCIPAL HEALTH PROBLEM OR DIAGNOSIS: coronary artery disease. OTHER HEALTH PROBLEM/S: not specified. TREATMENT RECEIVED/RECEIVING: CABG or valve replacement. OTHER SOCIAL/DEMOGRAPHIC DETAILS: 20% living alone, 55% retired.
Interventions	DETAILS OF INTERVENTION: within 2 days of discharge, a telephone call was made by a cardiovascular stepdown nurse. This nurse called once weekly for one month or more frequently if the needs or concerns of the patient or his family so required. The nurse was allowed to talk with either the patient or a family member. A standardized assessment sheet guided the calls. Areas of focus included respiratory, cardiac, and neurologic systems, fluid status, pain management, sleep, nutrition, elimination, activity, self-care, psychosocial status, wound management and patient knowledge. DETAILS OF CONTROL: usual care. CO-INTERVENTION? no. DETAILS OF CO-INTERVENTIONS: DELIVERY OF INTERVENTION Frequency: 4-? First time at day 2 after discharge. Period: 1 month. PROVIDERS: nurse. INTERVENTION QUALITY: unclear. FIDELITY/INTEGRITY: good.
Outcomes	NUMBER OF OUTCOMES: 4 OUTCOME / TOOL / TOOL VALIDATED / METHOD OF ASSESSMENT / TIME OF ASSESSMENT A.Psycho-social health of patients (uncertainty, anxiety, informational needs, mood, coping, quality of life, social activity, ..): Satisfaction / self-developed / unclear / postal questionnaire / 1 month after discharge. Depression / geriatric depression scale / unclear / postal questionnaire / 1 month after discharge. B.Physical health of patients (eg. functional status, self-care, self-efficacy, independence, ..):

Weaver 2001 *(Continued)*

	C.Other consumer oriented outcomes (eg. treatment adherence, knowledge, adverse events, ..): D. Health service delivery oriented outcomes (eg. hospital readmission, health services utilization, ..): Readmission / self-developed / no / hospital record / 1 month after discharge. ED-visits / self-developed / no / hospital record / 1 month after discharge.
Notes	·CHANGES IN TRIAL PROTOCOL ·CONTACT WITH AUTHOR ·POWER CALCULATION? ·RECORD IF THE STUDY WAS TRANSLATED FROM A LANGUAGE OTHER THAN ENGLISH. ·RECORD IF THE STUDY WAS A DUPLICATE PUBLICATION.

Risk of bias

Bias	Authors' judgement	Support for judgement
Allocation concealment?	Unclear risk	B - Unclear

Cells containing blanks under a heading mean there was no information on that item in the trial report.
No studies reported methods of follow-up for non-respondents, or adverse events.
RCT: randomised controlled trial
CCT: controlled clinical trial (quasi-randomised)

Characteristics of excluded studies *[ordered by study ID]*

Study	Reason for exclusion
Aadalen 1998	Intervention is not a telephone follow-up by a hospital based professional to patient.
Aaronson 1996	Study does not concern patients discharged from hospital to home.
Alcaide 1990	Study does not concern patients discharged from hospital to home.
Alfaro 1997	Does not present results of a controlled trial.
Allen 2002	Outcomes are not measured at least once within 3 months after discharge.
anonymous 1995a	Does not present results of a controlled trial.
anonymous 1995b	Does not present results of a controlled trial.
anonymous 1995c	Does not present results of a controlled trial.
anonymous 1996a	Does not present results of a controlled trial.
anonymous 1996b	Does not present results of a controlled trial.
anonymous 1997	Does not present results of a controlled trial.
anonymous 1998	Does not present results of a controlled trial.
anonymous 2001a	Does not present results of a controlled trial.

Study	Reason for exclusion
anonymous 2001b	Does not present results of a controlled trial.
anonymous 2001c	Does not present results of a controlled trial.
Appel 2002	Study does not concern patients discharged from hospital to home.
Arthur 2002	Outcomes are not measured at least once within 3 months after discharge.
Austin 1996	Study does not concern patients discharged from hospital to home.
Avlund 2002	Intervention is not a telephone follow-up by a hospital based professional to patient.
Bailey 1998	Does not present results of a controlled trial.
Barsevick 2002	Study does not concern patients discharged from hospital to home.
Bartlett 1976	Does not present results of a controlled trial.
Bean 1995	Does not present results of a controlled trial.
Beard 1978	Does not present results of a controlled trial.
Bedeian 1996	Does not present results of a controlled trial.
Beebe 2001	Study does not concern patients discharged from hospital to home.
Behrns 2000	Intervention is not a telephone follow-up by a hospital based professional to patient.
Benatar 2003	Intervention is not a telephone follow-up by a hospital based professional to patient.
Bennett 2000	Does not present results of a controlled trial.
Bergstrom 2000	Does not present results of a controlled trial.
Berkman 1999	Effects of the TFU can not be isolated and analyzed to some degree.
Berry 2002	Does not present results of a controlled trial.
Biermann 2000	Study does not concern patients discharged from hospital to home.
Biermann 2002	Study does not concern patients discharged from hospital to home.
Blake 1990	Study does not concern patients discharged from hospital to home.
Blue 2001	Intervention is not a telephone follow-up by a hospital based professional to patient.
Booker 2000	Does not present results of a controlled trial.
Bostelman 1994	Does not present results of a controlled trial.
Boter 1998	Does not present results of a controlled trial.
Bourbeau 2003	The intervention does not take place at least once within the first month after hospital disharge.
Branch 1999	Study does not concern patients discharged from hospital to home.

Study	Reason for exclusion
Brandis 1998	Does not present results of a controlled trial.
Brandt 1994	Does not present results of a controlled trial.
Brooks 2002	Study does not concern patients discharged from hospital to home.
Caison 1997	Study does not concern patients discharged from hospital to home.
Cave 1989	Does not present results of a controlled trial.
Celestino 1998	Does not present results of a controlled trial.
Chong 2003	Does not present results of a controlled trial.
Chow 2001	Does not present results of a controlled trial.
Cleuren 2000	Does not present results of a controlled trial.
Cooper 2000	Does not present results of a controlled trial.
Craddock 1999	Effects of the TFU can not be isolated and analyzed to some degree.
Dale 1997	Does not present results of a controlled trial.
Dantas 2002	Does not present results of a controlled trial.
Dardik 1997	Study does not concern patients discharged from hospital to home.
DeBusk 1985	Effects of the TFU can not be isolated and analyzed to some degree.
DeBusk 1994	Effects of the TFU can not be isolated and analyzed to some degree.
Dellasega 2000	Intervention is not a telephone follow-up by a hospital based professional to patient.
Delores 2000	Effects of the TFU can not be isolated and analyzed to some degree.
Doolittle 1997	Does not present results of a controlled trial.
Dunn 1995	Intervention is not a telephone follow-up by a hospital based professional to patient.
Eaton 2002	Study does not concern patients discharged from hospital to home.
Edwards 1997	Intervention is not a telephone follow-up by a hospital based professional to patient.
Elliott 1998	Does not present results of a controlled trial.
Engelman 1994	Effects of the TFU can not be isolated and analyzed to some degree.
Estey 1990	Study does not concern patients discharged from hospital to home.
Evans 1985	Effects of the TFU can not be isolated and analyzed to some degree.
Ezenkwele 2003	Intervention is not a telephone follow-up by a hospital based professional to patient.
Faithfull 2001	Effects of the TFU can not be isolated and analyzed to some degree.

Study	Reason for exclusion
Farrero 2001	Study does not concern patients discharged from hospital to home.
Ferrigno 2001	Intervention is not a telephone follow-up by a hospital based professional to patient.
Fitzgerald 1985	Study does not concern patients discharged from hospital to home.
Fleming 2002	Study does not concern patients discharged from hospital to home.
Fowler 1992	Does not present results of a controlled trial.
Frank 1986	Outcomes are not measured at least once within 3 months after discharge.
Frank 1987	Outcomes are not measured at least once within 3 months after discharge.
Frasure-Smith 1985	Study does not concern patients discharged from hospital to home.
Frasure-Smith 1991	Intervention is not a telephone follow-up by a hospital based professional to patient.
Frasure-Smith 1992	Intervention is not a telephone follow-up by a hospital based professional to patient.
Frasure-Smith 1997	Intervention is not a telephone follow-up by a hospital based professional to patient.
Frasure-Smith 2002	Intervention is not a telephone follow-up by a hospital based professional to patient.
Fretwell 1990	Effects of the TFU can not be isolated and analyzed to some degree.
Friedman 1998a	Study does not concern patients discharged from hospital to home.
Friedman 1998b	Does not present results of a controlled trial.
Fukuda 1999	Study does not concern patients discharged from hospital to home.
Gagnon 1997	Effects of the TFU can not be isolated and analyzed to some degree.
Gagnon 1999	Intervention is not a telephone follow-up by a hospital based professional to patient.
Gagnon 2002	Effects of the TFU can not be isolated and analyzed to some degree.
Gallagher 2003	Effects of the TFU can not be isolated and analyzed to some degree.
Galt 2000	Does not present results of a controlled trial.
Gamboa 2002a	Study does not concern patients discharged from hospital to home.
Gamboa 2002b	Study does not concern patients discharged from hospital to home.
Garland 1992	Does not present results of a controlled trial.
Garnett 1981	Study does not concern patients discharged from hospital to home.
Genev 1990	Study does not concern patients discharged from hospital to home.
Gilliss 1993	Effects of the TFU can not be isolated and analyzed to some degree.
Glasgow 1995	Study does not concern patients discharged from hospital to home.

Study	Reason for exclusion
Glasgow 1996	Study does not concern patients discharged from hospital to home.
Glasgow 1997	Study does not concern patients discharged from hospital to home.
Glasgow 2000	Study does not concern patients discharged from hospital to home.
Glasgow 2001	Does not present results of a controlled trial.
Glasgow 2002	Study does not concern patients discharged from hospital to home.
Goes 2002	Does not present results of a controlled trial.
Gortner 1988	Effects of the TFU can not be isolated and analyzed to some degree.
Grancelli 2003	Does not present results of a controlled trial.
Greineder 1995	Does not present results of a controlled trial.
Greineder 1999	Study does not concern patients discharged from hospital to home.
Griffin 1989	Study does not concern patients discharged from hospital to home.
Grunfeld 1999	Study does not concern patients discharged from hospital to home.
Gulliford 1997	Study does not concern patients discharged from hospital to home.
Harrison 1999	Study does not concern patients discharged from hospital to home.
Hartmann 1996	Does not present results of a controlled trial.
Hasseler 2002	Does not present results of a controlled trial.
Hauber 2002	Intervention is not a telephone follow-up by a hospital based professional to patient.
Hayes 2001a	Study does not concern patients discharged from hospital to home.
Hayes 2001b	Does not present results of a controlled trial.
Heidenreich 1999	Study does not concern patients discharged from hospital to home.
Heller 1993	Outcomes are not measured at least once within 3 months after discharge.
Hendricks 2000	Study does not concern patients discharged from hospital to home.
Hernandez 2003	Intervention is not a telephone follow-up by a hospital based professional to patient.
Hickey 1996	Intervention is not a telephone follow-up by a hospital based professional to patient.
Higgins 2001	Effects of the TFU can not be isolated and analyzed to some degree.
Hillebrand 1996	Outcomes are not measured at least once within 3 months after discharge.
Hornblow 1980	Does not present results of a controlled trial.
Hoskins 1985	Does not present results of a controlled trial.

Study	Reason for exclusion
Hoskins 2001	Intervention is not a telephone follow-up by a hospital based professional to patient.
Houzard 1998	Intervention is not a telephone follow-up by a hospital based professional to patient.
Hui 2000	Study does not concern patients discharged from hospital to home.
Intagliata 1976	Does not present results of a controlled trial.
Jahanshahi 1994	Study does not concern patients discharged from hospital to home.
James 1994	Does not present results of a controlled trial.
Joffe 1995	Study does not concern patients discharged from hospital to home.
Johnson 2000a	Study does not concern patients discharged from hospital to home.
Johnson 2000b	Outcomes are not measured at least once within 3 months after discharge.
Johnson 2000c	Does not present results of a controlled trial.
Jolly 2003	Does not present results of a controlled trial.
Jones 1988b	Does not present results of a controlled trial.
Jones 1997	Does not present results of a controlled trial.
Jowers 2000	Does not present results of a controlled trial.
Kasper 2002	Outcomes are not measured at least once within 3 months after discharge.
Kelly 1999	Does not present results of a controlled trial.
King 1991	Study does not concern patients discharged from hospital to home.
Kirkman 1994	Study does not concern patients discharged from hospital to home.
Kirscht 1981	Study does not concern patients discharged from hospital to home.
Kokubu 1999	Study does not concern patients discharged from hospital to home.
Kokubu 2000	Study does not concern patients discharged from hospital to home.
Korner-Bitensky 1994	Intervention is not a telephone follow-up by a hospital based professional to patient.
Kramer 2003	Effects of the TFU can not be isolated and analyzed to some degree.
Kunik 2001	Study does not concern patients discharged from hospital to home.
Lando 2001	Study does not concern patients discharged from hospital to home.
Laramee 2003	Effects of the TFU can not be isolated and analyzed to some degree.
Lear 2001	Study does not concern patients discharged from hospital to home.
Lear 2002	Study does not concern patients discharged from hospital to home.

Study	Reason for exclusion
Lee 1999	Study does not concern patients discharged from hospital to home.
Liew 1994	Intervention is not a telephone follow-up by a hospital based professional to patient.
Litzelman 1993	Study does not concern patients discharged from hospital to home.
Lundblad 2001	Does not present results of a controlled trial.
Lynch 2003	Study does not concern patients discharged from hospital to home.
MacMahon 1999	Does not present results of a controlled trial.
Madge 1997	Intervention is not a telephone follow-up by a hospital based professional to patient.
Madonna 1999	Does not present results of a controlled trial.
Maiman 1979	The intervention does not take place at least once within the first month after hospital disharge.
Maisiak 1996a	Study does not concern patients discharged from hospital to home.
Maisiak 1996b	Study does not concern patients discharged from hospital to home.
Manian 1993	Does not present results of a controlled trial.
Marcus 1998	Does not present results of a controlled trial.
Marrero 1995	Study does not concern patients discharged from hospital to home.
Mason 1998	Does not present results of a controlled trial.
Maunsell 1996	Effects of the TFU can not be isolated and analyzed to some degree.
McCorkle 2000	Effects of the TFU can not be isolated and analyzed to some degree.
McDonald 2002	Effects of the TFU can not be isolated and analyzed to some degree.
McGrath 2002	Does not present results of a controlled trial.
McIntosh 1994	Does not present results of a controlled trial.
McMurray 1998	Does not present results of a controlled trial.
McNamara 1995	Does not present results of a controlled trial.
Meenan 1998	Effects of the TFU can not be isolated and analyzed to some degree.
Miller 1995	Outcomes are not measured at least once within 3 months after discharge.
Miller 1997a	Outcomes are not measured at least once within 3 months after discharge.
Miller 1997b	Does not present results of a controlled trial.
Miller 2002a	Study does not concern patients discharged from hospital to home.
Miller 2002b	Does not present results of a controlled trial.

Study	Reason for exclusion
Miranda 2002	Does not present results of a controlled trial.
Mishel 2002	Outcomes are not measured at least once within 3 months after discharge.
Mohlman 2003	Study does not concern patients discharged from hospital to home.
Mohr 2000	Study does not concern patients discharged from hospital to home.
Moran 1998	Effects of the TFU can not be isolated and analyzed to some degree.
Morrison 2001	Intervention is not a telephone follow-up by a hospital based professional to patient.
Napolitano 2002	Study does not concern patients discharged from hospital to home.
Naylor 1999	Effects of the TFU can not be isolated and analyzed to some degree.
Nelson 2001	Does not present results of a controlled trial.
Newman 2002	Does not present results of a controlled trial.
Nicklin 1986	Does not present results of a controlled trial.
Nijdam 1999	Does not present results of a controlled trial.
Northouse 2002	Study does not concern patients discharged from hospital to home.
O'Neill 2001	Does not present results of a controlled trial.
Oddone 1999	Outcomes are not measured at least once within 3 months after discharge.
Oh 2003	Study does not concern patients discharged from hospital to home.
Pal 1998	Does not present results of a controlled trial.
Pal 2001	Does not present results of a controlled trial.
Palmer 2001	Study does not concern patients discharged from hospital to home.
Palmer 2002	Study does not concern patients discharged from hospital to home.
Peterson 2002	Does not present results of a controlled trial.
Pidd 2000	Does not present results of a controlled trial.
Poncia 2000	Does not present results of a controlled trial.
Powell 2001	Study does not concern patients discharged from hospital to home.
Powers 1983	Study does not concern patients discharged from hospital to home.
Proctor 2000	Does not present results of a controlled trial.
Pugh 1999	Outcomes are not measured at least once within 3 months after discharge.
Racelis 1998	The intervention does not take place at least once within the first month after hospital disharge.

Study	Reason for exclusion
Rakowski 1994	Does not present results of a controlled trial.
Rauh 1999	Effects of the TFU can not be isolated and analyzed to some degree.
Rawl 1998	Outcomes are not measured at least once within 3 months after discharge.
Rawl 2002	Effects of the TFU can not be isolated and analyzed to some degree.
Rene 1992	Study does not concern patients discharged from hospital to home.
Rich 1995	Effects of the TFU can not be isolated and analyzed to some degree.
Riegel 1996	Does not present results of a controlled trial.
Riegel 2000	Effects of the TFU can not be isolated and analyzed to some degree.
Rieger 1995	Intervention is not a telephone follow-up by a hospital based professional to patient.
Ries 2003	Study does not concern patients discharged from hospital to home.
Rigotti 1997	Effects of the TFU can not be isolated and analyzed to some degree.
Riley 1989	Does not present results of a controlled trial.
Roberts 1995	Study does not concern patients discharged from hospital to home.
Roglieri 1997	Effects of the TFU can not be isolated and analyzed to some degree.
Romano 2001	Does not present results of a controlled trial.
Rosbe 2000	Does not present results of a controlled trial.
Rosswurm 1998	Intervention is not a telephone follow-up by a hospital based professional to patient.
Ruchlin 2001	Intervention is not a telephone follow-up by a hospital based professional to patient.
Sanders 1997	Study does not concern patients discharged from hospital to home.
Sandgren 2000	Study does not concern patients discharged from hospital to home.
Sandgren 2003	Study does not concern patients discharged from hospital to home.
Sardell 2000	Does not present results of a controlled trial.
Schatz 2003	Study does not concern patients discharged from hospital to home.
Schectman 1994	Study does not concern patients discharged from hospital to home.
Schultz 1993	Study does not concern patients discharged from hospital to home.
Sciamanna 2000	Does not present results of a controlled trial.
Shah 1998	Does not present results of a controlled trial.
Shapiro 1995	Intervention is not a telephone follow-up by a hospital based professional to patient.

Study	Reason for exclusion
Shon 2002	Study does not concern patients discharged from hospital to home.
Shu 1996	Does not present results of a controlled trial.
Siegel 1992	Study does not concern patients discharged from hospital to home.
Simon 1997	Outcomes are not measured at least once within 3 months after discharge.
Simon 2003	Outcomes are not measured at least once within 3 months after discharge.
Sluijk 1998	Does not present results of a controlled trial.
Smeenk 1998a	Does not present results of a controlled trial.
Smeenk 1998b	Intervention is not a telephone follow-up by a hospital based professional to patient.
Smith 1988	Effects of the TFU can not be isolated and analyzed to some degree.
Smith 2002	Does not present results of a controlled trial.
Sneed 1997	Outcomes are not measured at least once within 3 months after discharge.
Soskolne 1993	Intervention is not a telephone follow-up by a hospital based professional to patient.
Sparacino 1997	Does not present results of a controlled trial.
Stanislaw 1994	Effects of the TFU can not be isolated and analyzed to some degree.
Steel 2003	Intervention is not a telephone follow-up by a hospital based professional to patient.
Stevens 1993	Effects of the TFU can not be isolated and analyzed to some degree.
Stevens 2000	Outcomes are not measured at least once within 3 months after discharge.
Stewart 1998	Intervention is not a telephone follow-up by a hospital based professional to patient.
Strecher 1983	Does not present results of a controlled trial.
Strinko 2000	Does not present results of a controlled trial.
Svahn 2002	Effects of the TFU can not be isolated and analyzed to some degree.
Taylor 1990	Outcomes are not measured at least once within 3 months after discharge.
Taylor 1996	Effects of the TFU can not be isolated and analyzed to some degree.
Taylor 1997	Outcomes are not measured at least once within 3 months after discharge.
Taylor-Davis 2000	Study does not concern patients discharged from hospital to home.
Thewissen 2000	Does not present results of a controlled trial.
Thompson 1999	Study does not concern patients discharged from hospital to home.
Tiippana 2003	Does not present results of a controlled trial.

Study	Reason for exclusion
Tkachuk 2003	Study does not concern patients discharged from hospital to home.
Townsend 1996	Intervention is not a telephone follow-up by a hospital based professional to patient.
Turner 1996	Does not present results of a controlled trial.
Tyc 2003	Study does not concern patients discharged from hospital to home.
Valanis 2001	Does not present results of a controlled trial.
Valanis 2002	Does not present results of a controlled trial.
Valanis 2003	Does not present results of a controlled trial.
Vale 2002	Outcomes are not measured at least once within 3 months after discharge.
van Beelen 1996	Does not present results of a controlled trial.
van Elderen 1994	Effects of the TFU can not be isolated and analyzed to some degree.
van Elderen 2001	Effects of the TFU can not be isolated and analyzed to some degree.
Varma 1999	Intervention is not a telephone follow-up by a hospital based professional to patient.
Vogel 1996	Does not present results of a controlled trial.
Vrehen 2000	Does not present results of a controlled trial.
Wade 1998	Outcomes are not measured at least once within 3 months after discharge.
Walker 1999	Intervention is not a telephone follow-up by a hospital based professional to patient.
Warden 2000	Does not present results of a controlled trial.
Wasson 1992	Study does not concern patients discharged from hospital to home.
Weinberger 1991	Study does not concern patients discharged from hospital to home.
Weinberger 1993	Study does not concern patients discharged from hospital to home.
Weinberger 1998	Does not present results of a controlled trial.
Weinstein 1996	Study does not concern patients discharged from hospital to home.
Welch 2000	Study does not concern patients discharged from hospital to home.
Wells 2003	Study does not concern patients discharged from hospital to home.
Wewers 1994	Study does not concern patients discharged from hospital to home.
Wilbourne 1997	Does not present results of a controlled trial.
Wong 2001a	Does not present results of a controlled trial.
Wong 2001b	Does not present results of a controlled trial.

Study	Reason for exclusion
Wulsin 2002	Intervention is not a telephone follow-up by a hospital based professional to patient.
York 1997	Effects of the TFU can not be isolated and analyzed to some degree.
Young 2000	Does not present results of a controlled trial.
Zahlmann 2002	Study does not concern patients discharged from hospital to home.
Zeegers 1997	Does not present results of a controlled trial.
Zorc 2003	Intervention is not a telephone follow-up by a hospital based professional to patient.

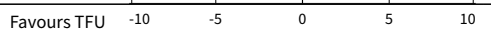
DATA AND ANALYSES

Comparison 1. Effect of TFU on anxiety in cardiac surgery patients at appr. 1 month after discharge compared to usual care

Outcome or subgroup title	No. of studies	No. of participants	Statistical method	Effect size
1 Effect of TFU on anxiety in cardiac surgery patients at appr. 1 month after discharge compared to usual care	3	278	Std. Mean Difference (IV, Random, 95% CI)	-0.47 [-1.28, 0.34]

Analysis 1.1. Comparison 1 Effect of TFU on anxiety in cardiac surgery patients at appr. 1 month after discharge compared to usual care, Outcome 1 Effect of TFU on anxiety in cardiac surgery patients at appr. 1 month after discharge compared to usual care.

Study or subgroup	TFU N	TFU Mean(SD)	Control N	Control Mean(SD)	Std. Mean Difference Random, 95% CI	Weight	Std. Mean Difference Random, 95% CI
Beckie 1989	37	29.8 (7.7)	37	43.2 (11.5)		32.3%	-1.36[-1.86,-0.85]
Hartford 2002	63	5.6 (5.5)	68	5.3 (6.2)		34.71%	0.04[-0.3,0.38]
Roebuck 1999	42	4 (3.2)	31	4.5 (4.1)		32.99%	-0.14[-0.6,0.33]
Total ***	**142**		**136**			**100%**	**-0.47[-1.28,0.34]**
Heterogeneity: Tau²=0.46; Chi²=20.83, df=2(P<0.0001); I²=90.4%							
Test for overall effect: Z=1.14(P=0.26)							

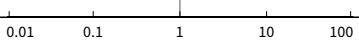


Comparison 2. Effect of TFU on compliance

Outcome or subgroup title	No. of studies	No. of partici-pants	Statistical method	Effect size
1 Effect of TFU on compliance in cardiac surgery patients compared to usual care	2	102	Risk Ratio (M-H, Random, 95% CI)	1.68 [0.59, 4.78]
2 Effect of TFU on compliance (making an appointment) in ED patients compared to usual care	3	1039	Risk Ratio (M-H, Random, 95% CI)	1.70 [0.92, 3.14]
3 Effect of TFU on compliance (keeping an appointment) in ED patients compared to usual care	3	820	Risk Ratio (M-H, Random, 95% CI)	1.58 [1.01, 2.48]

Analysis 2.1. Comparison 2 Effect of TFU on compliance, Outcome 1 Effect of TFU on compliance in cardiac surgery patients compared to usual care.

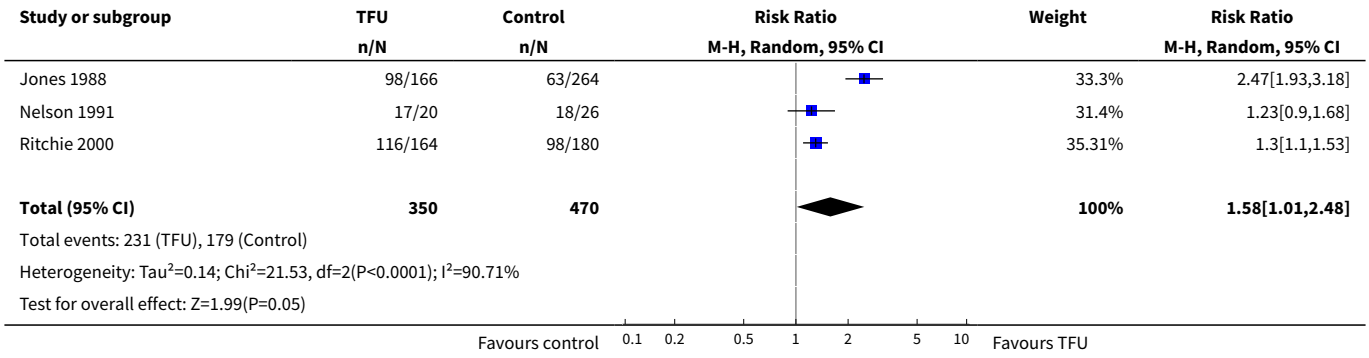
Study or subgroup	TFU n/N	Control n/N	Risk Ratio M-H, Random, 95% CI	Weight	Risk Ratio M-H, Random, 95% CI
Al-Asseri 2001	32/36	12/36		48.59%	2.67[1.66,4.29]
Faulkner 2000	13/15	12/15		51.41%	1.08[0.79,1.49]
Total (95% CI)	**51**	**51**		**100%**	**1.68[0.59,4.78]**
Total events: 45 (TFU), 24 (Control)					
Heterogeneity: Tau^2=0.53; Chi^2=13.28, df=1(P=0); I^2=92.47%					
Test for overall effect: Z=0.97(P=0.33)					



Analysis 2.2. Comparison 2 Effect of TFU on compliance, Outcome 2 Effect of TFU on compliance (making an appointment) in ED patients compared to usual care.

Study or subgroup	TFU n/N	Control n/N	Risk Ratio M-H, Random, 95% CI	Weight	Risk Ratio M-H, Random, 95% CI
Chande 1994	120/133	67/132		33.12%	1.78[1.49,2.12]
Jones 1988	141/166	87/264		33.05%	2.58[2.15,3.1]
Ritchie 2000	145/164	147/180		33.82%	1.08[0.99,1.18]
Total (95% CI)	**463**	**576**		**100%**	**1.7[0.92,3.14]**
Total events: 406 (TFU), 301 (Control)					
Heterogeneity: Tau^2=0.29; Chi^2=104.78, df=2(P<0.0001); I^2=98.09%					
Test for overall effect: Z=1.69(P=0.09)					

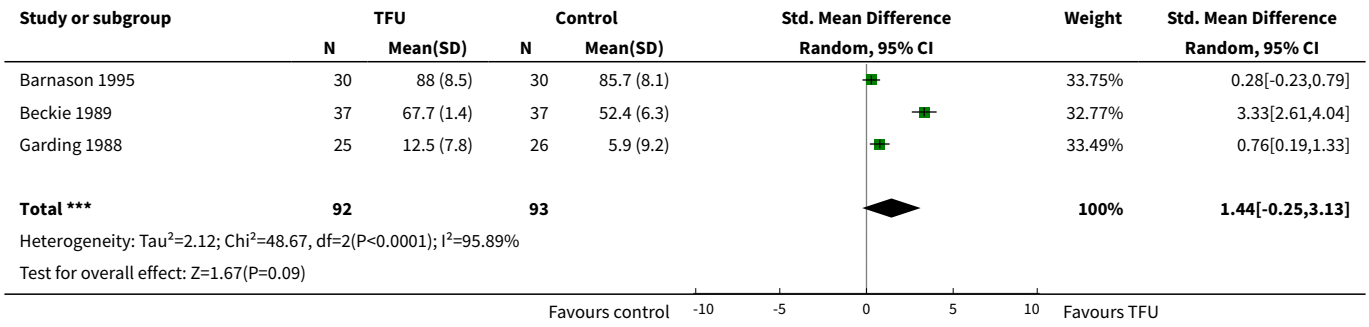
Analysis 2.3. Comparison 2 Effect of TFU on compliance, Outcome 3 Effect of TFU on compliance (keeping an appointment) in ED patients compared to usual care.



Comparison 3. Effect of TFU on knowledge in cardiac patients compared to control condition

Outcome or subgroup title	No. of studies	No. of participants	Statistical method	Effect size
1 Effect of TFU on knowledge in cardiac patients at around 6 weeks post discharge compared to control condition	3	185	Std. Mean Difference (IV, Random, 95% CI)	1.44 [-0.25, 3.13]

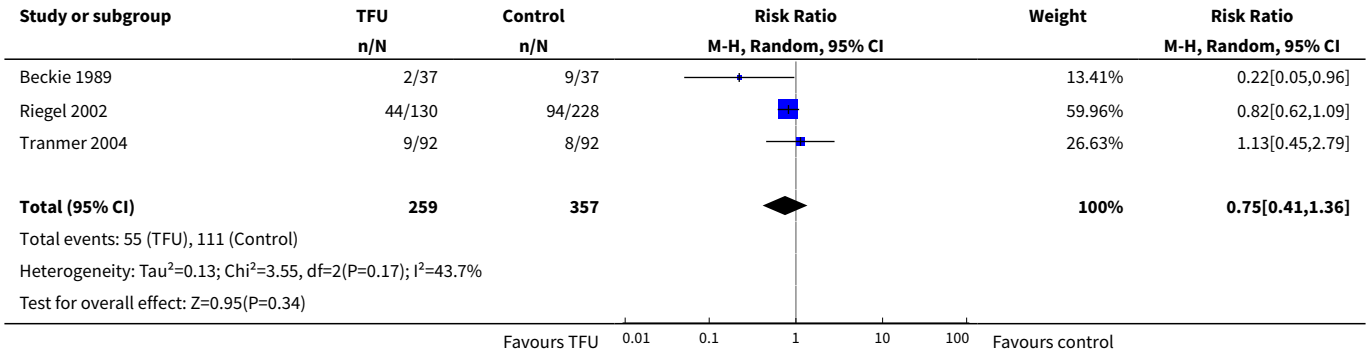
Analysis 3.1. Comparison 3 Effect of TFU on knowledge in cardiac patients compared to control condition, Outcome 1 Effect of TFU on knowledge in cardiac patients at around 6 weeks post discharge compared to control condition.



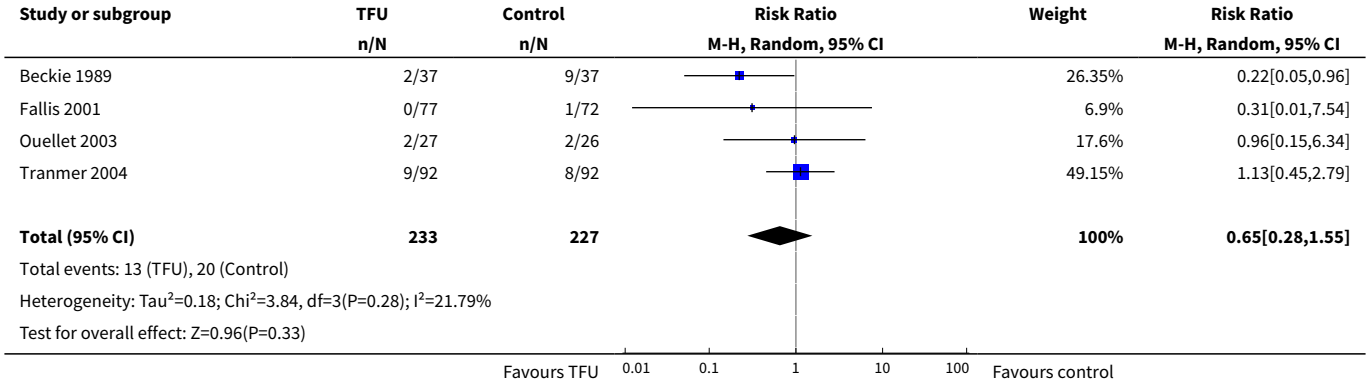
Comparison 4. Effect of TFU on readmissions

Outcome or subgroup title	No. of studies	No. of participants	Statistical method	Effect size
1 Effect of TFU on readmissions in cardiac patients compared to usual care	3	616	Risk Ratio (M-H, Random, 95% CI)	0.75 [0.41, 1.36]
2 Effect of TFU on readmissions in surgery patients compared to control condition	4	460	Risk Ratio (M-H, Random, 95% CI)	0.65 [0.28, 1.55]

Analysis 4.1. Comparison 4 Effect of TFU on readmissions, Outcome 1 Effect of TFU on readmissions in cardiac patients compared to usual care.



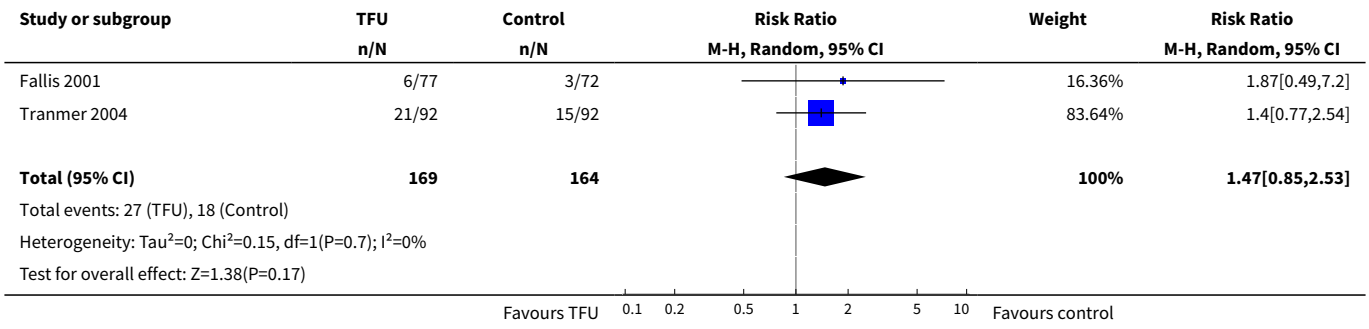
Analysis 4.2. Comparison 4 Effect of TFU on readmissions, Outcome 2 Effect of TFU on readmissions in surgery patients compared to control condition.



Comparison 5. Effect of TFU on ED visits in surgery patients compared to control condition

Outcome or subgroup title	No. of studies	No. of partici-pants	Statistical method	Effect size
1 Effect of TFU on ED visits in surgery patients compared to control condition	2	333	Risk Ratio (M-H, Random, 95% CI)	1.47 [0.85, 2.53]

Analysis 5.1. Comparison 5 Effect of TFU on ED visits in surgery patients compared to control condition, Outcome 1 Effect of TFU on ED visits in surgery patients compared to control condition.



ADDITIONAL TABLES

Table 1. Outcome/patient combinations for which pooling was considered

Outcome category	Cardiac patients	Surgery patients	ED patients	Paediatric patients	Neurology patients
PSYCHO-SOCIAL HEALTH OUTCOMES					
-anxiety	3	3			
-satisfaction	5	6			
-depression	2	2			
OTHER CONSUMER ORIENTED OUTCOMES					
-compliance	2	2	4	3	
-knowledge	3	2			
HEALTH SERVICES ORIENTED OUTCOMES					
-readmissions	4	5			2
-ED-visits	2	3			

APPENDICES

Appendix 1. PubMed controlled trials search strategy

(randomised controlled trial [pt] OR controlled clinical trial [pt] OR randomised controlled trials [mh] OR random allocation [mh] OR double-blind method [mh] OR single-blind method [mh] OR clinical trial [pt] OR clinical trials [mh] OR ("clinical trial" [tw]) OR ((singl* [tw] OR doubl* [tw] OR trebl* [tw] OR tripl* [tw]) AND (mask* [tw] OR blind* [tw])) OR ("latin square" [tw]) OR placebos [mh] OR placebo* [tw] OR random* [tw] OR research design [mh:noexp]) OR comparative study [mh] OR evaluation studies [mh] OR follow-up studies [mh] OR prospective studies [mh] OR cross-over studies [mh] OR control* [tw] OR prospectiv* [tw] OR volunteer* [tw]) NOT (animal [mh] NOT human [mh])

Appendix 2. PubMed topic-specific strategy

"telecommunications"[MeSH Terms] OR tele?communication* [tw] OR electronic communication* OR "telephone"[MeSH Terms] OR telephon* [tw] OR phone[tw] OR phone call* OR follow-up call* OR call?back [tw] OR calls [tw] OR calling [tw] OR call [tw] OR tele?health OR tele?medicine
AND
"patient discharge"[MeSH Terms] OR ((patient* OR client* OR consumer* OR recipient* OR subject*) AND discharg*) OR hospital discharg* OR "hospital discharge"[tw] OR "aftercare"[MeSH Terms] OR aftercare [tw] OR "continuity of patient care"[MeSH Terms] OR convales*[tw] OR recover*[tw] OR post?operative care OR ((patient* OR client* OR consumer* OR recipient* OR subject* OR care?giver* OR carer* OR famil*) AND (inform* OR educat* OR instruct* OR counsel* OR advise* OR advice OR reassur* OR support*)) OR information* need* [tw] OR post?hospital*

Appendix 3. BiomedCentral search strategy

(("telecommunications" OR tele?communication* [tw] OR electronic communication* OR "telephone" OR telephon* [tw] OR phone[tw] OR phone call* OR follow-up call* OR call?back [tw] OR calls [tw] OR calling [tw] OR call [tw] OR tele?health OR tele?medicine)) AND ("patient discharge" OR ((patient* OR client* OR consumer* OR recipient* OR subject*) AND discharg*) OR hospital discharg* OR "hospital discharge"[tw] OR "aftercare" OR aftercare [tw] OR "continuity of patient care" OR convales*[tw] OR recover*[tw] OR post?operative care OR ((patient* OR client* OR consumer* OR recipient* OR subject* OR care?giver* OR carer* OR famil*) AND (inform* OR educat* OR instruct* OR counsel* OR advise* OR advice OR reassur* OR support*)) OR information* need* [tw] OR post?hospital*)

Appendix 4. CENTRAL search strategy

1.((((((((((((TELECOMMUNICATIONS or TELECOMMUNICATION*) OR (ELECTRONIC and COMMUNICATION*)) OR TELEPHONE) OR TELEPHON*) OR PHONETW) OR (PHONE AND CALL*)) OR (FOLLOW-UP AND CALL*)) OR CALLBACK) OR CALLS) OR CALLING) OR CALL) OR TELEHEALTH) OR TELEMEDICINE)
2.COMMUNICATION*:ME
3.TELEPHONE*:ME
4.HOTLINES*:ME
5.TELEMEDICINE*:ME
6.TELECOMMUNICATIONS*:ME
7.PHONE-CALL
8.PHONE-CALLS
9.CALL-BACK
10.(((((((#1 or #2) or #3) or #4) or #5) or #6) or #7) or #8) or #9)
11.PATIENT-DISCHARGE*:ME
12.AFTERCARE*:ME
13.CONTINUITY-OF-PATIENT-CARE*:ME
14.DISCHARG*
15.FOLLOW-UP
16.((((#11 or #12) or #13) or #14) or #15)
17.(#10 and #16)

Appendix 5. CINAHL search strategy

1.DISCHARGE in TI,AB,DE,TP,SH
2.explode "Transfer-Discharge"/ all topical subheadings / all age subheadings
3.DISCHARG* in TI,AB,DE,TP,SH
4.explode "Discharge-Planning"/ all topical subheadings / all age subheadings
5.explode "Early-Patient-Discharge"/ all topical subheadings / all age subheadings
6.explode "After-Care"/ all topical subheadings / all age subheadings
7.AFTERCARE in TI,AB,DE,TP,SH
8.AFTER?CARE in TI,AB,DE,TP,SH
9.POST?HOSPITAL* in TI,AB,DE,TP,SH
10.explode "Continuity-of-Patient-Care"/ all topical subheadings / all age subheadings
11.CONVALES* in TI,AB,DE,TP,SH
12.explode "Recovery"/ all topical subheadings / all age subheadings
13.REASSUR* in TI,AB,DE,TP,SH
14.INFORMATION* NEED* in TI,AB,DE,TP,SH
15.explode "Information-Needs"/ all topical subheadings / all age subheadings
16.POST?DISCHARGE in TI,AB,DE,TP,SH
17.explode "Patient-Discharge"/ all topical subheadings / all age subheadings
18.#1 or #2 or #3 or #4 or #5 or #6 or #7 or #8 or #9 or #10 or #11 or #12 or #13 or #14 or #15 or #16 or #17
19.RANDOMIZED CONTROLLED TRIAL in TI,AB,DE,TP,SH

20.RANDOMIZED CLINICAL TRIAL in TI,AB,DE,TP,SH
21.CLINICAL TRIAL in TI,AB,DE,TP,SH
22.explode "Clinical-Trials"/ all topical subheadings / all age subheadings
23.CONTROLLED CLINICAL TRIAL in TI,AB,DE,TP,SH
24.CONTROLLED TRIAL in TI,AB,DE,TP,SH
25.RANDOM* in TI,AB,DE,TP,SH
26.CROSS-OVER STUDIES in TI,AB,DE,TP,SH
27.CROSS-OVER STUDY in TI,AB,DE,TP,SH
28.RESEARCH DESIGN in TI,AB,DE,TP,SH
29.explode "Research"/ all topical subheadings / all age subheadings
30.explode "Study-Design"/ all topical subheadings / all age subheadings
31.#19 or #20 or #21 or #22 or #23 or #24 or #25 or #26 or #27 or #28 or #29 or #30
32.TELEPHONE in TI,AB,DE,TP,SH
33.explode "Telephone-Information-Services"/ all topical subheadings / all age subheadings
34.TELE?COMMUNICATION* in TI,AB,DE,TP,SH
35.explode "Telecommunications"/ all topical subheadings / all age subheadings
36.explode "Telemedicine"/ all topical subheadings / all age subheadings
37.ELECTRONIC COMMUNICATION in TI,AB,DE,TP,SH
38.telephon*
39.PHONE in TI,AB,DE,TP,SH
40.explode "Telephone"/ all topical subheadings / all age subheadings
41.PHONE CALL* in TI,AB,DE,TP,SH
42.FOLLOW?UP CALL* in TI,AB,DE,TP,SH
43.CALL?BACK in TI,AB,DE,TP,SH
44.CALLING in TI,AB,DE,TP,SH
45.CALLS in TI,AB,DE,TP,SH
46.CALL in TI,AB,DE,TP,SH
47.TELE?HEALTH in TI,AB,DE,TP,SH
48.explode "Telehealth"/ all topical subheadings / all age subheadings
49.explode "Telenursing"/ all topical subheadings / all age subheadings
50.#32 or #33 or #34 or #35 or #36 or #37 or #38 or #39 or #40 or #41 or #42 or #43 or #44 or #45 or #46 or #47 or #48 or #49
51.#18 and #31 and #50

Appendix 6. EMBASE search strategy

1 exp Hospital Discharge/
2 exp AFTERCARE/
3 aftercare.mp. or exp AFTERCARE/
4 continuity care.mp.
5 discharge planning.mp. [mp=title, abstract, subject headings, drug trade name, original title, device manufacturer, drug manufacturer name]
6 hospital discharge.mp. [mp=title, abstract, subject headings, drug trade name, original title, device manufacturer, drug manufacturer name]
7 (discharg$ or patient$ discharge or post#hospital or aftercare or continuity of care or continuity of patient care or convales$ or recover or reassur$ or information$ need).mp. [mp=title, abstract, subject headings, drug trade name, original title, device manufacturer, drug manufacturer name]
8 1 or 2 or 3 or 4 or 5 or 6 or 7
9 exp TELEPHONE/ or telephone.mp.
10 telecommunication.mp. or exp TELECOMMUNICATION/
11 (tele#communication$ or electronic communication or telephon$ or phone or phone call$ or follow#up call$ or call#back or calls or calling or call or tele#health or tele#medicine or tele#nursing).mp. [mp=title, abstract, subject headings, drug trade name, original title, device manufacturer, drug manufacturer name]
12 9 or 10 or 11
13 8 and 12
14 Randomized Controlled Trial/
15 Clinical Trial/
16 (randomized controlled trial or controlled clinical trial or randomized controlled trials or random allocation or double#blind or single#blind or clinical trial$ or random$ or research design or follow-up stud$ or prospective stud$ or cross-over stud$ or comparative stud$).mp. [mp=title, abstract, subject headings, drug trade name, original title, device manufacturer, drug manufacturer name]
17 14 or 15 or 16
18 13 and 17

Appendix 7. ERIC search strategy

(explode "Research-" in DEM,DER) and ((discharg* or patient* discharge or post?hospital or aftercare or continuity of care or continuity of patient care or convales* or recover or reassur* or information* need*) and (((explode "Telephone-Communications-Systems" in DEM,DER) or (explode "Telephone-Instruction" in DEM,DER)) or (telecommunication* or tele?communication* or electronic communication or telephon* or phone or phone call* or follow?up call* or call?back or calls or calling or call or tele?health or tele?medicine or tele?nursing) or (explode "Telecommunications-" in DEM,DER)))

Appendix 8. Invert search strategy

Telefoon OR telefonisch OR telefonische OR telefoontje OR telefoneren OR telefoneer OR telefoneert OR telefoneerde OR telefoneerden OR opbellen OR nabellen

Appendix 9. LILACS search strategy

(telefon) or "TELEFONE" or "TELEFONEMA" or "TELEFONIA" or "TELEFONICA" or "TELEFONICAS" or "TELEFONICO" or "TELEFONICOS" or "TELEFONISTAS" or "TELEFONO" or "TELEFONOS" or "TELEINFORMATICA" or "TELEINFORMATICS" or "TELEMATHIC" or "TELEMATICA" or "TELEMATICAS" or "TELEMATICS" or "TELEMEDECINE" or "TELEMEDICINA" or "TELEMEDICINE" or "TELENURSE" or "TELESALUD" or "TELEPHONE" or "TELEPHONES" or "TELEPHONIC" [Title words] or (telefon) or "TELEFONE" or "TELEFONEMA" or "TELEFONIA" or "TELEFONICA" or "TELEFONICAS" or "TELEFONICO" or "TELEFONICOS" or "TELEFONISTAS" or "TELEFONO" or "TELEFONOS" or "TELEINFORMATICA" or "TELEINFORMATICS" or "TELEMATHIC" or "TELEMATICA" or "TELEMATICAS" or "TELEMATICS" or "TELEMEDECINE" or "TELEMEDICINA" or "TELEMEDICINE" or "TELENURSE" or "TELESALUD" or "TELEPHONE" or "TELEPHONES" or "TELEPHONIC" [Subject descriptor] or (telefon) or "TELEFONE" or "TELEFONEMA" or "TELEFONIA" or "TELEFONICA" or "TELEFONICAS" or "TELEFONICO" or "TELEFONICOS" or "TELEFONISTAS" or "TELEFONO" or "TELEFONOS" or "TELEINFORMATICA" or "TELEINFORMATICS" or "TELEMATHIC" or "TELEMATICA" or "TELEMATICAS" or "TELEMATICS" or "TELEMEDECINE" or "TELEMEDICINA" or "TELEMEDICINE" or "TELENURSE" or "TELESALUD" or "TELEPHONE" or "TELEPHONES" or "TELEPHONIC" [Abstract words]

Appendix 10. PICARTA search strategy

((ziekenhuisontslag OR (ontslag BIJ/4 ziekenhuis) OR (zorg BIJ/4 ontslag) OR postontslag* OR nazorg OR (continuit* BIJ/4 zorg)) OR (discharge#planning) OR (discharge # planning) OR (hospital # discharge) OR (aftercare) OR (patient* BIJ discharge) OR (post#hospital) OR (post # hospital) OR (continuity # care) OR follow#up OR (follow # up)) AND (telefo* OR telepho* OR call OR phone OR tele#health OR tele#medicine OR tele#communicat* OR tele#nursing)

Appendix 11. PsycINFO / PsycLIT search strategy

(("Discharge-Planning" in DE) or ("Hospital-Discharge" in DE) or ("Aftercare-" in DE) or (discharg* or patient* discharge or post?hospital or aftercare or continuity of care or continuity of patient care or convales* or recover or reassur* or information* need*)) and (("Telecommunications-Media" in DE) or (telecommunication* or tele?communication* or electronic communication or telephon* or phone or phone call* or follow?up call* or call?back or calls or calling or call or tele?health or tele?medicine or tele?nursing)) and (((RANDOM) or (RANDOM-) or (RANDOM-ASSIGNMENT)) or (randomized controlled trial* or controlled clinical trial* or random* or double? blind or clinical trial* or research design or comparative study or cross?over stud*) or (("Empirical-Methods" in DE) or ("Experimental-Design" in DE) or ("Treatment-Effectiveness-Evaluation" in DE)))

Appendix 12. Science Citation Index search strategy

(discharg* OR patient* discharge OR post?hospital OR aftercare OR continuity of care OR continuity of patient care OR convales* OR recover OR reassur* OR information* need*) AND (telecommunication* OR tele?communication* OR electronic communication OR telephon* OR phone OR phone call* OR telephone follow?up OR follow?up call* OR call?back OR calls OR calling OR call OR tele?health OR tele?medicine OR tele?nursing)

Appendix 13. Sociofile search strategy

((telecommunication* or tele?communication* or electronic communication or telephon* or phone or phone call* or follow?up call* or call?back or calls or calling or call or tele?health or tele?medicine or tele?nursing) or ((explode "Telecommunications-" in DE) or (explode "Telephone-Communications" in DE) or (explode "Telephone-Surveys" in DE))) and (((explode "After-Care" in DE) or (explode "Discharge-" in DE)) or (discharg* or patient* discharge or post?hospital or aftercare or continuity of care or continuity of patient care or convales* or recover or reassur* or information* need*))

WHAT'S NEW

Date	Event	Description
4 April 2008	Amended	Converted to new review format.

HISTORY

Protocol first published: Issue 4, 2003
Review first published: Issue 4, 2006

Date	Event	Description
14 May 2004	Amended	We added a sixth inclusion criterion to the protocol, that states that only studies in which the effect of the TFU can be isolated and analyzed, will be included. This extra inclusion criterium has no consequences for the search strategy, and no other studies will be included or excluded than was originally intended. The extra inclusion criterium was needed because studies wherein the effect of the TFU cannot be isolated do not add to the aim of this review. Moreover, the review is not intended to compare TFU interventions to multi-component interventions.

CONTRIBUTIONS OF AUTHORS

Patriek Mistiaen is the lead author of the review and was involved in all stages of the review. He conceived and designed the protocol for the review. He developed the search strategies, performed all searches, screened search results and organised the retrieval of the papers. He screened retrieved papers against inclusion criteria, appraised the quality of the papers, abstracted data and wrote to authors of papers for additional information. Patriek Mistiaen coordinated the data management, entered data into RevMan, did the data-analysis and wrote the text of the review.

Else Poot is co-author of the review and was involved in all stages of the review, especially by given substantial comments in the design of the protocol, search strategies, data collection form and final text of the review. She screened retrieved papers against inclusion criteria, appraised the quality of the papers, checked all data-entry and data-analysis and made a substantial contribution in the writing of the final text.

DECLARATIONS OF INTEREST

One of the review authors (PM) is also an co-author of an included study (Boter 2000) in the review.

SOURCES OF SUPPORT

Internal sources

- NIVEL, Netherlands Institute for Health Care Services Research, Netherlands.

External sources

- No sources of support supplied

INDEX TERMS

Medical Subject Headings (MeSH)

*Patient Discharge; *Telephone; Aftercare [*methods] [standards]; Hospitals

MeSH check words

Humans